

ESPP Working Meeting

Policies and tools for the bio-nutrient circular economy

Carbon, Nutrients and Soils

European Compost Network ECN

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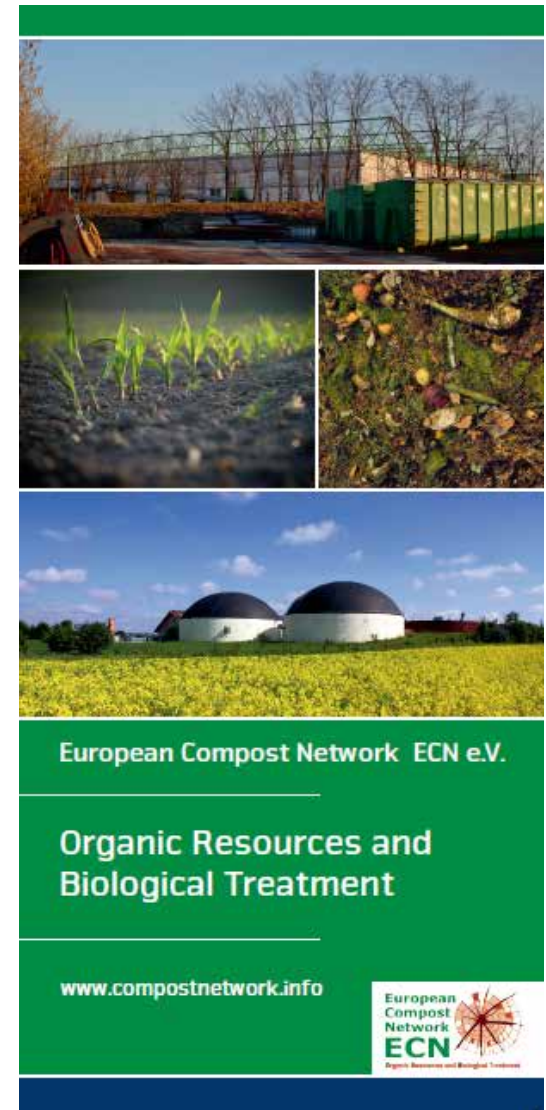
2 December 2015, Brussels

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The European Compost Network

- § Network for the organic waste recycling sector in Europe
- § Promoting sustainable recycling practices in composting, anaerobic digestion and other biological treatment processes of organic resources
- § Integrated organic waste recycling solutions generating **high quality products** for the benefit of consumers and the environment



The European Compost Network

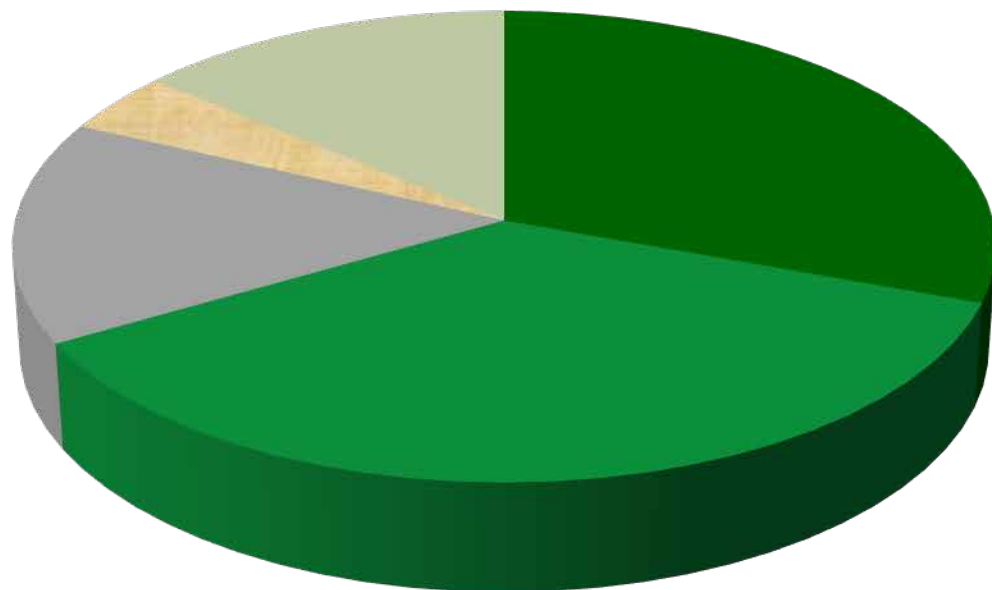
Objectives

- § Achieve a **EU legal framework** that supports **separate collection, biological treatment of organic residues** and **use of quality assured compost and digestate products**
- § **Facilitate favourable commercial conditions and opportunities** for companies, **(local) governments** and other stakeholders in Europe **working on products from organic waste**, by facilitating research, stimulating international project cooperation etc.
- § Achieve Europe wide **implementation of compost and digestate quality assurance schemes**, use ECN-QAS as a benchmark
- § **Increase knowledge and know-how** amongst –stakeholders- , via networking platforms, information dissemination, educational campaigns, etc.

The European Compost Network - Membership

Status of ECN Membership

72 Members from 28 European Countries



■ Biowaste Organisations (22)

■ Companies (26)

■ Academic Institutes (11)

■ Governments (3)

■ Non-profit Environmental Organisations (10)

ECN represents more than 2.500 treatment plants with more than 30 M tpa treatment capacities in 28 European countries.

EU Policies on Secondary Organic Materials

EU Circular Economy

- § **EU Action Plan** on Circular economy (date: 2 Dec. 2015)
- § EU proposal for the **revision of waste legislation** (date: 2 Dec. 2015)
- § EU proposal for the **revision of the EU Fertilisers Regulation** (date: Q1 2016)
 - More flexible regulation with the aim to place fertiliser and **new products from recycling and recovery processes**, which should be CE labelled, on the European Market
 - Expanding the scope of the regulation on fertilisers (**incl. organic fertilisers**), **soil improvers and growing media**, liming materials
 - For all materials environmental and healthy criteria will be included in the regulation
 - In addition specific requirements for the different products will be described in annexes

Developments in EU Fertilisers Regulation

§ Product specific annexes

- Compost and digestate, based on the technical proposal of JRC – End-of-Waste criteria for compost and digestate, published 1/2014
- Struvite
- Ashes from biomass incineration, sludge incineration etc.
- Biochar

§ Procedures and scope of application (not yet fixed)

- Formal agreement of the annexes as quasi 'End-of-waste-criteria' after expert discussion of the Commission
- Scope of application; fertilisers, soil improvers and growing media

§ New proposal on EU Fertilisers

Q1 2016

EU Policy Relations

Industrial Emission Directive

BREFs for biological waste treatment processes

REACH Regulation

Circular Economy Package

CE Action plan

Review of waste legislation

Review EU Fertilisers Regulation

Resource-Product Policy

Common Agricultural Policy (CAP)

Bio-based Economy

Lead market Initiative

ABP Regulation

Key role of Biowaste in Circular Economy

1. It closes biological material and nutrient cycles, and reduces the linear economy of landfilling waste.
2. It produces **biobased products** which can replace scarce resources and fossil based products such as peat, mineral fertilizers and fossil fuels. This will reduce reliance on the importation of these resources and the use of compost will have long-term beneficial effects on soils.
3. It creates **sustainable jobs at local level** and job opportunities are created for future generations.



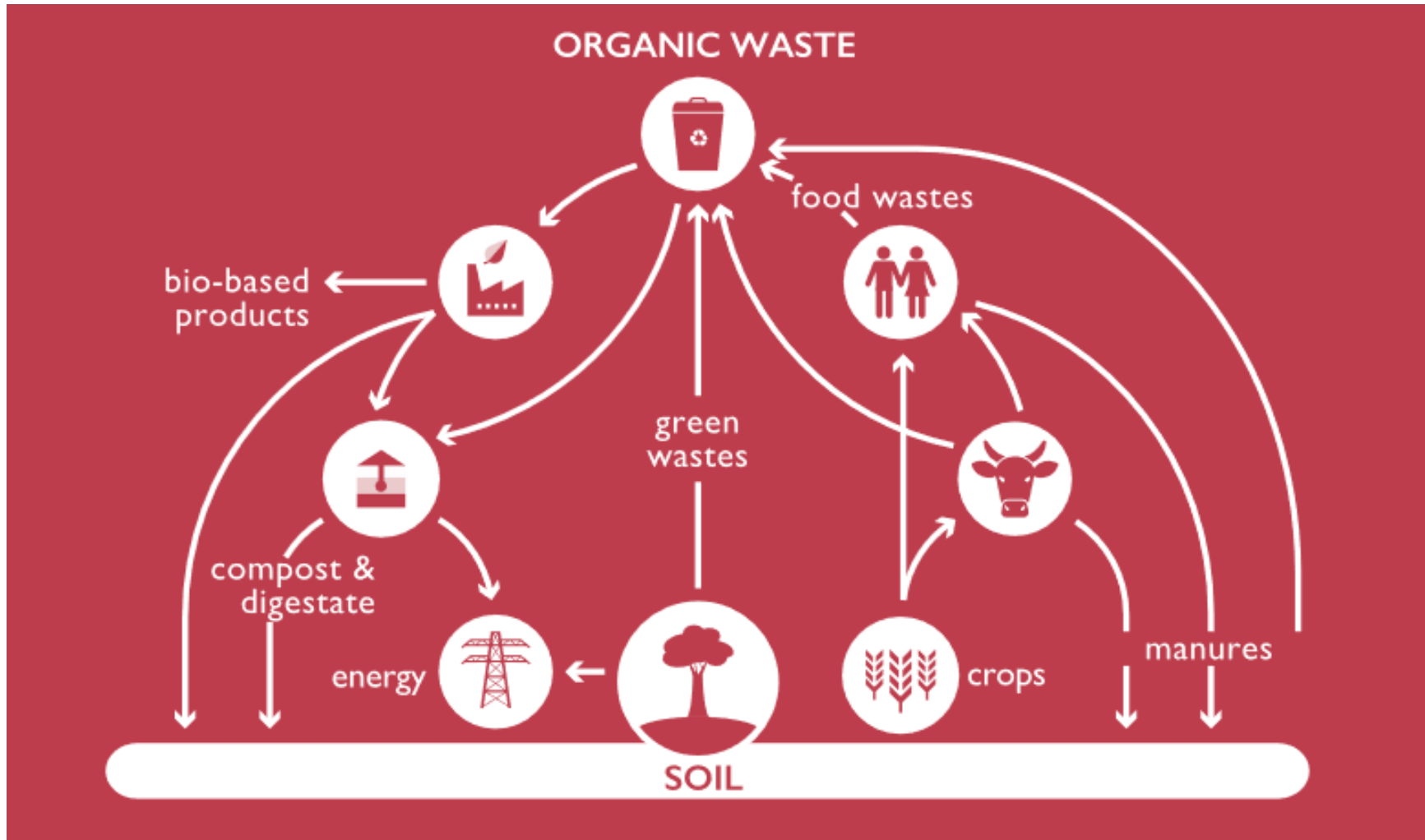
 **100 Mio. tons of biowaste creates 20.000-50.000 new jobs**

EU Policy Recommendations

Moving towards a more circular economy needs to be accompanied by **updating the existing waste legislation** in Europe.

- § **Set an obligation for implementing separate collection of biowaste** in the member states as a guiding principle.
- § **Establish targets for biowaste recycling** (biowaste recycling targets based on separate collection) as a fundamental and result-oriented driver to secure investment in sustainable recycling of biowaste.
- § **Finalise the end-of-waste criteria for compost and digestate**, so as to facilitate further developments of European markets for these products.
- § **Develop a comprehensive product – resource-based – waste legislation** to support the use of secondary materials recycled from organic waste.

The Organic Cycle



Source: ISWA 2015: Circular Economy: Carbon, nutrients and soil. Technical report 4

Benefits of Recycling Organic Resources

- § Conserving resources
- § Reducing the environmental impact of waste disposal
- § Mitigating climate change
- § Enhancing the functionality of soils
- § Feeding an ever-growing global population
- § Decoupling product manufacture from fossil fuels



Input for composting and digestate plants

Components of organic materials:

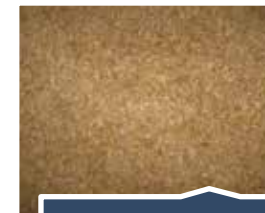
- Organic fraction from MSW (food waste)
- Garden wastes
- Crop residues
- Manures
- Commercial & industrial (e.g. food and green waste)
- (Sewage Sludge)



Food waste



Garden waste



Crop residues



Manures

Source: ISWA 2015

Nutrient and organic matter potential of biowaste

Potential of Biowaste

Total potential of biowaste	125-130 Mio. tonnes per year
Potential of biowaste from MSW	90 Mio. tonnes per year
Compost f.m. (40 %)	36 Mio. tonnes per year
Compost d.m. (dm 65 %)	23,4 Mio. tonnes
• Organic matter d.m.	8-10 Mio. tonnes
• Nitrogen d.m.	350.000 tonnes
• Potassium d.m.	340.000 tonnes
• Phosphorus d.m.	81.600 tonnes

Organic Carbon in Soils

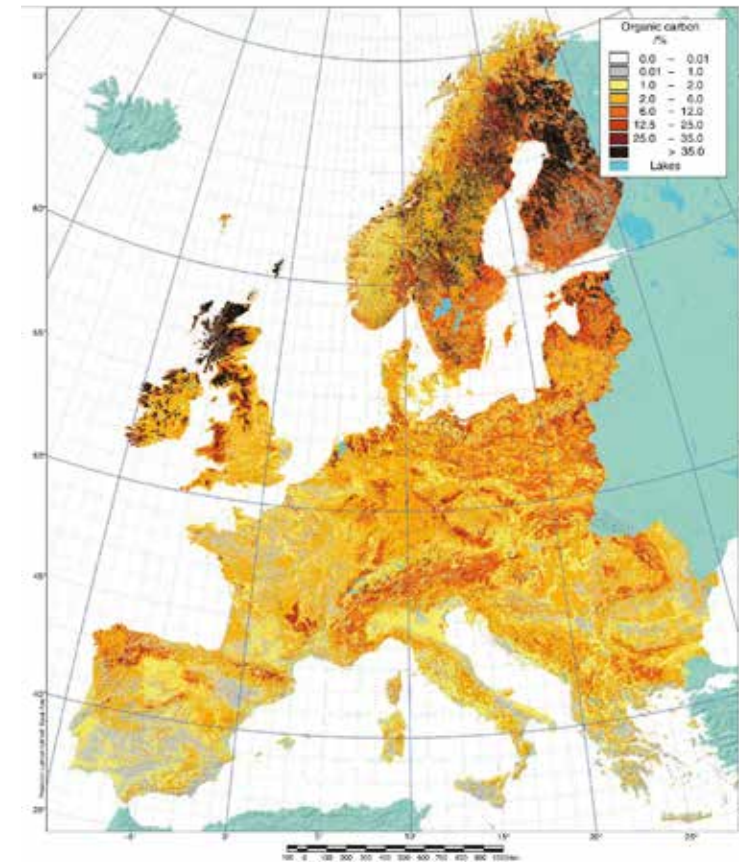
§ > 45 % of European soils are degraded in soil organic matter (COM(2006)231)¹

World-wide situation²

§ 80% of the world's agricultural land suffers moderate to severe erosion

§ 10 million ha of agricultural land are lost through soil erosion every year in the world

§ Over last 40 years ~30% of world's cropland has become unproductive



Source: Montanarella L. 2009

1) Rusco, E., Jones R.J., Bidoglio, G. 2001: Organic Matter in the soils of Europe. Present status and future trends. EUR 20556 EN JRC, Office of official publication of the European Commission, Luxembourg

2) Pimentel D., Burgess, M. 2013: Soil Erosion Threatens Food Production. Agriculture 2013, 3 443-463; doi: 10.3390/agriculture3030443

Benefits of Organic Matter in Soils

Increase of water holding capacity in soils
*reduction of climatic impacts
(heavy rain falls)*

Facilitate reworking
reduction of fossil fuels

Decrease of soil loss
reduction of erodability

Increase of soil warming
to enhance crop production in spring

Benefits of Organic Matter
(Humus)

Increase of soil activity
better soil structure, higher delivery potential for nutrients

Stabilise soil structure
*better infiltration
better trafficability*

Increase the potential to save nutrients
Increase of the nutrient delivery potential

Phyto sanitary effects
Reduction of soil decease

Humus Reproduction of Organic Resources

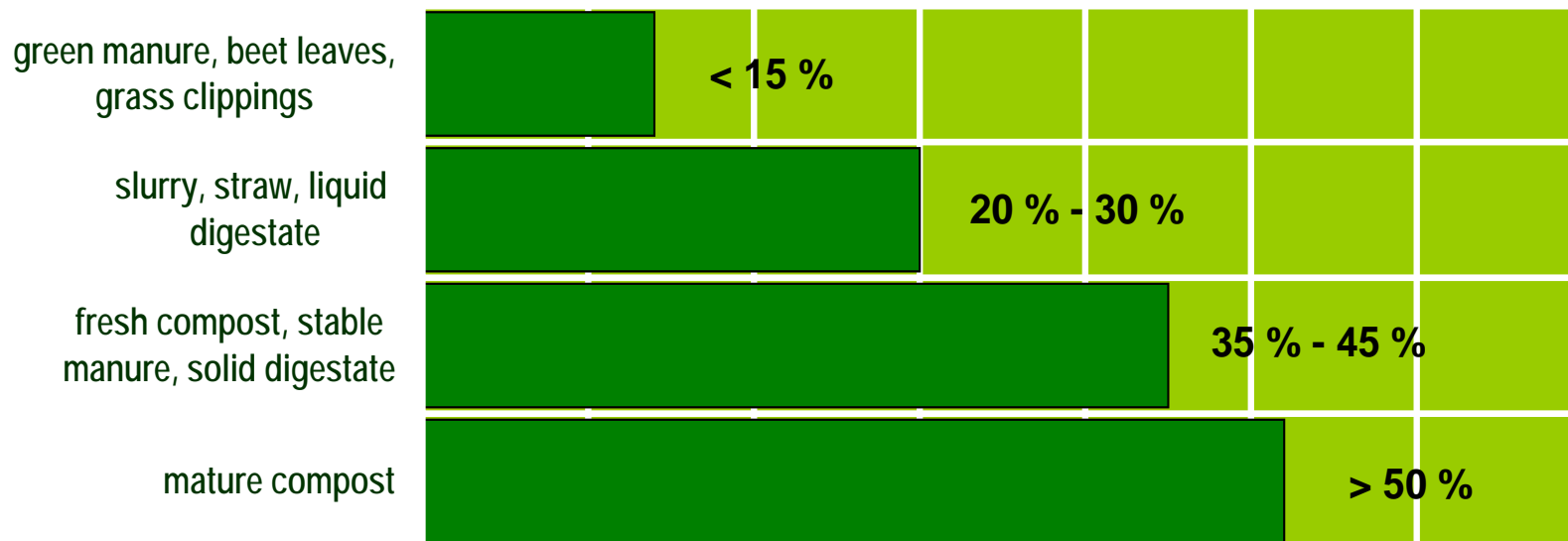


Agricultural humus management
Crop rotation

Internal biomass production
Manure and slurry

Exogenous biomass production
Secondary fertiliser

Humus Management in Agriculture



	Organic Carbon	Corg in stabilised humus	Humus-C reproduction
Mature compost (40 t /ha in 3 years)	21 %	51 %	2,600 kg/ha
Slurry (30 m ³ /ha * yr)	43 %	21 %	100 kg/ha
Straw (7 t/ha * yr)	49 %	21 %	600 kg/ha
Green manure (60 t/ha * yr)	52 %	14 %	500 kg/ha

Source: BGK/FAL 2005: Organic Fertilisation

Organic Resources and Biological Treatment

Humus and Fertiliser Value of Compost and Digestate

Biowaste Potential		Compost [f.m.]		Digestate [f.m.]
90.000.000 t		36.000.000 t		81.000.000 t
	kg/t Compost [f.m.]	t	kg/m ³ Digestate [f.m.]	t
N total	9,11	327.960	4,95	400.950
P ₂ O ₅ (P total)	4,68	168.480	1,70	137.700
K ₂ O (K total)	7,74	278.640	2,08	168.480
Humus-C	71,00	2.556.000	5,00	405.000
	€/t Compost [f.m.]	€	€/m ³ Digestate [f.m.]	€
Total Fertiliser Value	12,35	444.600.000	5,88	476.280.000
Humus-C Value	12,02	432.720.000	0,83	67.230.000

Calculation based on the BGK certificates on average nutrients and Humus-C contents for biowaste compost and liquid digestate from biowaste.

Further Policy Recommendations

Revision of the CAP reform

- § Assessment of the good agricultural and environmental condition (GAEC)
 - § Increased support for agri-environmental measures through including carbon sequestration in cross-compliance regulation
 - § Support of the use of recycled nutrients in agriculture

Revision of the Renewable Energy Directive

- § Expanding the scope to renewable materials (bio-based and recycled products incl. compost and digestate)

Revision of Lead Market Initiative for Bio-based Products

- § Market incentives for supporting of bio-based and recycled (P-) products

European Compost Network

Communication

ECN E-Bulletin and ECN NEWS

ECN-QAS Manual, Info paper

Organisation of Workshops etc.

Websites and Social Media

General info:

www.compostnetwork.info

Info about ECN-QAS:

www.ecn-qas.eu

EMAIL: NOT LOOKING BEAUTIFUL? VIEW IT IN YOUR BROWSER

EUROPEAN COMPOST NETWORK ECN e.V.
Network for Organic Resources and Biological Treatment

ECN E-BULLETIN NO. 10, 2015 27 OCTOBER 2015

EU Commission
Roadmap on the Revision of the EU Fertilisers Regulation published

On 22 October 2015, the EU Commission has published the roadmap on the revision of the EU Fertilisers Regulation (EC) No 2003/2003. With this initiative, the Commission aims to create a level playing field for all fertiliser materials and to facilitate the cross-border market for fertilisers from secondary raw materials.

Following up the revision of the EU Fertilisers Regulation is a concrete step forward towards a Circular economy. This initiative will boost investment in production and uptake of effective, safe, innovative fertilisers produced from organic and secondary materials, in line with the circular economy model by transforming waste into nutrients for crops. The more efficient recourse of secondary raw materials can offer significant environmental benefits, reduces dependency on import of critical raw materials outside of the EU, as well as an increased variety of high quality fertilising products.

The European Compost Network will follow up the discussion in the EU Fertilisers Working Group. The next meeting is scheduled for 27 November 2015.

The roadmap on the revision of the EU Fertilisers Regulation can be downloaded [here](#).

News on Circular Economy
New Circular Economy Package announced for 2nd December

At the Scottish Resources Conference (8 Oct. 2015) the EC's Director of Green Economy, Kęstutis Sadauskas had announced that the European Commission's (EC) Circular Economy Package will be released on 2 December.

European Compost Network ECN

No. 01 2015

ECN NEWS

EU FERTILISER

Re-Thinking the Circular Economy Package

As a result of the revision of the EU Fertilisers Regulation, the Commission aims to create a level playing field for all fertiliser materials and to facilitate the cross-border market for fertilisers from secondary raw materials.

The European Commission's (EC) Circular Economy Package, announced on 29 October 2015, is a landmark initiative that will boost investment in production and uptake of effective, safe, innovative fertilisers produced from organic and secondary materials, in line with the circular economy model by transforming waste into nutrients for crops. The more efficient recourse of secondary raw materials can offer significant environmental benefits, reduces dependency on import of critical raw materials outside of the EU, as well as an increased variety of high quality fertilising products.

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Organic Resources and Biological Treatment

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Quality Manual

ECN-QAS

European Quality Assurance Scheme for Compost and Digestate

European Compost Network ECN e.V.

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Organic Resources and Biological Treatment



European Compost Network

Announcement

ORBIT2016

Conference Dates:	25 - 28 May 2016
Deadline for Abstract submission:	31 December 2015
Early registration deadline:	29 February 2016
Full Paper Submission:	31 March 2016

Thanks for your attention!



25th - 28th May 2016

ORBIT2016

Organic Resources and Biological Treatment

10th International Conference on
"Circular Economy and Organic Waste"

Heraklion, Crete, Greece

www.orbit2016.gr

ORGANISED BY:

- Harokopio University
Prof. Katia Lazaridi
- Technological Educational Institute of Crete
Assoc. Prof. Thrasyvoulos Manios
- European Compost Network (ECN)

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- Hellenic Association of Composters