

ANALYSIS

BY THE SECRETARIAT OF THE COMMISSION DEVE

For the CoR Opinion on
Green Paper on the management of bio-waste in the European Union
COM(2008) 811 final

Rapporteur: Ms Mona-Lisa NORRMAN (SE/PES)

1. Key messages

- Bio-waste management offers great opportunities for the EU's regions and cities to become a resource-efficient recycling society and to contribute towards combating climate change. The European Commission should deliver a proposal for a **bio-waste directive** that provides with legal certainty in the field, whilst taking into account the local and regional specificities.
- The Green Paper misses a stronger reference to **bio-waste prevention**, including composting of food and green waste at source. Member States' national waste prevention programmes should determine, with the maximum involvement of regional and local authorities, specific targets. An EU bio-waste directive could set bio-waste prevention targets and standardise benchmarking.
- In order to create a level playing field and to steer bio-waste towards sustainable treatment options, a future bio-waste directive should establish **minimum requirements for bio-waste treatment**. The waste hierarchy, giving priority to recycling, should remain the structuring principle. However, in order to adapt this principle to local conditions, local and regional authorities should be enabled to derogate from this hierarchy by providing life cycle analyses (LCA) or similar assessments.
- The establishment of a binding **recycling targets for bio-waste at national level** instead at EU level, as well as the setting of a binding **EU minimum target for separate collection** instead of a separate collection obligation may better reflect the differences in the state of play in Member States and regions; both would however ensure that alternative biological treatments of bio-waste diverted from landfills are actively encouraged as viable treatment options.
- **Common quality standards for compost** and digestate from bio-waste could ensure that the increases in the amounts that are biologically treated provide sound environmental benefits as well as assist to build up consumers' confidence and to develop a wider market for compost.

2. Relevance for the Committee of the Regions

In most Member States, it is local and regional authorities that are responsible for implementing EU waste management policy. They count amongst the producers of bio-waste, implement national waste management plans and waste prevention programmes and can set up their own ones, plan the localisation, grant permits or manage bio-waste treatment facilities and waste collection systems, carry out control and inspection and can raise awareness of their citizens by information and education campaigns.¹

¹ CdR 47/2006 fin, CdR 254/2005 fin

Consequently, local and regional authorities are amongst the main recipients of the Green Paper on bio-waste and should play a key role in the process of developing new approaches and proposals within this waste area.

3. Suggestions to the rapporteur

The secretariat recommends a number of points that the rapporteur might want to consider when drafting the opinion. Their structure follows the structure of the Green Paper.

3.1 General remarks

Towards a directive on bio-waste

The CoR could welcome that the European Commission at the first stage has launched a Green Paper in order to invite stakeholders to contribute towards the discussion on shaping future directions on management of bio-waste.

The CoR could argue that, in order to build a clearer legal framework and to bring legal certainty to the subject matter, it would be desirable to have a **single legal instrument covering the management of bio-waste in the EU**, setting common standards and procedures. The CoR could welcome the recent improvements for managing bio-waste introduced by the European Parliament and Council into Art. 22 on bio-waste of the revised Waste Framework Directive (WFD), however they only provide with a very loose framework.

The CoR could deplore that already in 2003, the European Commission announced that it would present a such proposal.² With increasing amounts of bio-waste diverted from landfills, waste managers have to choose between different treatment options. Once facilities and strategies are in place, it will be very hard for local and regional authorities to implement new practices.

The CoR could call on the European Commission to **include the regional and local dimension** in the formulation of a future bio-waste directive. The rapporteur, taking into account previous CoR opinions and in particular the experience gained by the CoR with the implementation of the Landfill Directive³, could urge the following **general elements** to be considered in a future bio-waste directive:

- pinpointing the administrative and financial resources needed to implement the legislation and **ensuring financial and technical feasibility** for local and regional authorities and businesses engaged in implementation of the directive;
- encouraging the use of **economic instruments** in bio-waste policy, whilst avoiding distortion of competition and smooth functioning of the internal market;
- reference to the **polluter pays-principle** as strengthened by Art. 14 WFD; with the costs of bio-waste management to be borne by the original waste producer or by the current or previous waste holders and not by the public in general;
- **harmonising methodologies for quantifying** organic waste generation, landfill bio-waste diversion rates, prevention potentials and other relevant indicators, in order to close gaps in

² COM(2003) 301 final, footnote No 27

³ CdR 47/2006 fin, CdR 254/2005 fin, CdR 239/2003 fin, CdR 269/2000 fin

coverage and comparability of Member States' progress and to compare the results at local, regional, national and EU level;

- **limiting information and reports** required by the European Commission from Member States to just a few essential facts, in order to limit the administrative costs.

Further to the adoption of a directive on bio-waste, some years after its entry into force, the European Commission could ask the **CoR to come forward with an impact report** on the local and regional implications of this directive, similar to the successful work carried out by the CoR on the Landfill Directive.

3.2 Better prevention of bio-waste

The rapporteur could regret the lack of **emphasis** given in the Green Paper to bio-waste prevention, as practical steps taken in most Member States to date are still by far not enough.

The rapporteur could underline the need for all policy levels in the EU to take differentiated actions on both a) **primary prevention** of bio-waste, including minimising food waste at production and consumption level as well as minimising green waste by “smart gardening”, and b) **secondary prevention**, but to avoid the organic waste collection and treatment, by promoting composting of food and green waste at source (“home, community and on-site composting”).⁴

The EU, Member States and local/regional authorities should promote **codes of conduct and voluntary agreements by retailers and food brands** to work towards reducing food waste at production level (conception of products, the production itself, their distribution and storage).

Member States, within their **national waste prevention programmes** according to Art. 29 WFD, should set, with the close involvement of regional and local authorities, specific targets on bio-waste prevention, including benchmarks to monitor progress. The CoR has called for at least the stabilisation of overall waste generation by 2010 as well as further significant reductions by 2020.⁵

The rapporteur, in line with the CoR's opinion on the WFD, could call for the EU to set within a future **EU bio-waste directive bio-waste prevention targets** and – this would be also possible under Art. 29 WFD – to standardise indicators by which progress can be assessed.

The CoR could call upon the **European Commission** to continue to finance innovative projects of local and regional authorities that set up integrated qualitative and quantitative bio-waste prevention systems, e.g. through its LIFE+ Programme and to support platforms for facilitating the exchange of best practices.

Whilst taking note of many innovative actions already carried out at local and regional level, the CoR could call for support to all **local and regional authorities to:**

- carry out their own **bio-waste prevention strategies and action plans**, employing a systematic consultative decision making process, focusing on experimented successful activities and using a mix of instruments;
- promote supportive **economic instruments and incentives**, such as PAYT (pay-as-you-throw) schemes/ variable charging;

⁴ COLLADO 2008, see annex

⁵ CdR 47/2006 fin

- carry out **food waste prevention campaigns** that address the consumption of their citizens, of private and public canteens and schools, aiming at raising awareness of food-waste issues, enabling “smart consumption” action through easy and small changes;
- promote “**smart gardening**” of their own public property and related awareness and education actions for their citizens and local businesses in order to minimise green waste, involving clever planning and appropriate management of green areas;
- promote **home/collective composting or on-site treatment facilities on company grounds**, results of recently conducted studies demonstrate that home & collective composting programs are successful and cost effective in communities under various conditions. Related costs, such as distribution of free/ discounted home composting equipment, can be compensated by avoided collection, transport and disposal/ treatment costs.

3.3 Further limiting of landfilling of bio-waste

The CoR could be strongly concerned about the European Commission’s findings that landfilling , despite of the diversion obligation of Art. 5 of the EU Landfill Directive, is **still the most common method for disposing of municipal bio-waste** in the enlarged EU, with continuing greenhouse gas emissions and negative impacts on land use and health issues.

The rapporteur could call upon the European Commission to consider changing the current obligations of Landfill Directive into a **ban of landfilling biodegradable waste by 2020**. There are already now Member States which have introduced deadlines for a landfill ban on municipal bio-waste or foresee stricter and timelier reductions than the Landfill Directive.⁶ On the other hand, the CoR has observed that some Member States still have a short tradition of tackling waste problems.⁷

The CoR could further reiterate⁸, that the Landfill Directive’s obligation on biodegradable waste, which is limited to municipal waste, should be **extended to encompass all waste sources**.

The CoR has stressed that, in order to divert bio-waste from going to landfills, bio-waste specific landfill tax or other **financial incentives** have to be stimulated.⁹

3.4 Treatment options for bio-waste diverted from landfill

Create a level playing field for bio-waste management at EU level

The rapporteur, in line with the CoR’s opinion on the WFD, could call for a future bio-waste directive to establish **minimum requirements for bio-waste treatment** in accordance with Art. 22 WFD, aimed at steering towards sustainable treatment options as well as setting common facility standards. However, flexibility should be built into the proposal to allow Member States to take national and regional conditions into account.

Treatment options which need to be strengthened

The CoR could maintain its position that, in line with the waste hierarchy, **priority should be given to the recycling of bio-waste** as opposed to other forms of bio-waste treatment, most pointedly

⁶ COWI A/S, see annex

⁷ CdR 254/2005 fin

⁸ CdR 112/97 fin

⁹ CdR 254/2005 fin

incineration, which though useful is in danger of becoming an easy way out especially for countries with only a limited commitment to selective collection and recycling.¹⁰

Assessments strongly point to **anaerobic digestion with biogas production and the following use of the rest material for compost**, in the majority of cases, being a more attractive and sustainable alternative treatment method than incineration when diverting away from landfills.¹¹ The CoR has urged to increase the cost of waste treatment methods other than recycling, in order to prevent the indiscriminate use of incineration.¹²

The CoR could however qualify its position, pointing out that the environmental benefits of different treatment methods depend on the local conditions such as population density, climate and infrastructure. In this regard, the CoR could take note of findings in the Green Paper, which stipulate that **in special cases, recycling can be not superior to incineration**.

Life-cycle assessment as an option to derogate from the waste hierarchy

The CoR could reiterate that the waste hierarchy remains the structuring principle. However, in order to adapt this principle to local conditions in the EU, in line with Art. 4 (2) WFD, local and regional authorities should be enabled to justify local derogations from this hierarchy by providing **life cycle analyses (LCA)** on the overall impacts of the generation and management of bio-waste.¹³

The CoR could stress that, however, presently **LCA do not represent a real operational alternative** for local and regional authorities. The CoR could regret that the WFD did not introduce a provision for a **common methodology** for the use of LCA to be adopted at Community level, as recommended by the CoR. Local authorities and waste managers ought to have clear guidance and it should be determined who is responsible for validating LCAs.

Stimulate alternative waste treatment at local and regional level

The rapporteur could note that moving away from simple waste disposal towards sustainable bio-waste management requires a substantial effort by the local and regional level. In order to stimulate alternative waste treatment options than landfill, local and regional authorities need

- **additional human and financial resources** to perform this task, in particular in the newer Member States;¹⁴
- to be continuously informed about **innovative techniques** and to be supported when taking innovative actions, e.g. by the LIFE+ or the EU's Research Framework Programme;
- **close cooperation amongst all levels of government and between local and regional authorities** to overcome administrative borders of neighbouring municipalities and regions, e.g. when establishing common bio-waste treatment facilities or collection schemes;
- **combined efforts of different sectors** (e.g. waste, agriculture, energy, transport) in applying clever solutions; as well as **involvement** of citizens, businesses and NGOs in the decisions regarding bio-waste policy, by using instruments such as Local Agenda 21;

¹⁰ CdR 254/2005 fin, CdR 239/2003 fin

¹¹ COWI A/S, see annex.

¹² CdR 239/2003 fin

¹³ CdR 47/2006 fin

¹⁴ CdR 254/2005 fin

- **awareness raising** campaigns to guide public behaviour; encouraging **agreements with local companies** to participate in separated collection schemes and to increase the quality;
- **the promotion the exchange of good practice at European level** on advanced bio-waste treatment, encouraging maximum dissemination to all Member States.

3.5 Improving energy recovery

The CoR could urge the EU and Member States to substantially increase, within their funding for **renewable energies and biomass action plans**, their support for local and regional authorities in setting up facilities for anaerobic digestion of bio-waste with **biogas production**.

Biogas based on food and green waste achieves synergies between recycling and energy recovery when the rest material is used as compost. It can **replace less sustainable forms of biomass production** that are based on monoculture crops with their negative impacts on natural resources.¹⁵ Local and regional authorities can promote “local bio-energy for local use” by using the gas or energy produced e.g. for the heating of their buildings, their own car fleets or public transport.

The rapporteur could stress that **incineration with energy recovery** can make a valuable contribution, under the condition that this based on high levels of energy recovery with advanced technology, that the energy produced is used for electricity *and* for district heating purposes (CHP) and replaces fossil fuels, and that waste transport is kept to a minimum.¹⁶

3.6 Increasing bio-waste recycling

The CoR could reiterate that bio-waste recycling needs to be strongly promoted by all government levels in the EU.¹⁷ It could recognise the potential of a diversified bio-waste recycling sector in promoting **innovation and new jobs** within the EU’s regions.

Bio-waste recycling targets

The CoR could believe that the recycling targets as laid down in Art. 11 (2) WFD are not sufficient and binding enough to ensure a substantial move in the EU towards recycling of bio-waste. It could therefore support the **establishment of binding recycling targets for bio-waste**, preferably at national level instead of EU level, as this may better reflect the differences in the state of play in Member States.¹⁸

Recycling targets could ensure that quality composting and alternative biological treatments are actively encouraged as viable treatment options for this waste stream. This would also provide with **a level of certainty** for the investments of businesses engaged in recycling.¹⁹

Separate collection obligation/ targets

The CoR could support the separate collection systems for bio-waste as the **most effective method** of ensuring that targets for recycling are achieved. The degree to which bio-waste waste can be composted or used for biogas production depends to a large extent on its homogeneity and purity.

¹⁵ CdR 160/2008 fin

¹⁶ COWI A/S, see annex.

¹⁷ CdR 254/2005 fin; CdR 47/2006 fin

¹⁸ CdR 47/2006 fin

¹⁹ COWI A/S, see annex.

The rapporteur could feel that the voluntary introduction of a separate collection of bio-waste, as stipulated in Art 22 WFD is not sufficient. He could call for the setting of a **binding minimum target for separate collection** within a future bio-waste Directive. This would ensure that there are significant amounts of separately collected waste available for composting plants.

Compared to the **alternative of a mandatory separate collection**, the setting of targets would have the advantage of maintaining a certain level of freedom for individual Member States and regions in framing their specific strategy for compliance²⁰. In case that a separate collection obligation would be introduced by the EU, the CoR could call for derogations to be allowed for inner cities and for rural areas with low population density.

3.7 Contributing to soil improvement – standards for compost

The CoR has identified the lack of references as a main difficulty for establishing a market for composting.²¹ The CoR could support **common quality standards for compost and digestate** from bio-waste to be set at EU level, as they would assist to build up consumers' confidence in the product and thereby to develop a geographically wider market for compost. They could ensure that the increases in the amounts that are biologically treated provide sound environmental benefits and assist in reducing the unsustainable use of peat for similar purposes.

The rapporteur could urge European standards to cover at least the most **common heavy metals and a minimum of two standard categories**, serving the different purpose in the use of compost for either at home/growing of vegetables or for others such as construction purposes. Some countries have relatively comprehensive systems of standards for compost²².

4. Subsidiarity, proportionality and better regulation²³

4.1 Legal basis

The proposed Green Paper aims "to explore options for the further development of the management of bio-waste" and prepare a debate on the possible need for future policy action, which will feed into the forthcoming impact assessment for such action.

A Green Paper is a non-legislative document and thus does not state any legal basis. However, taking into account its subject matter, it is foreseeable that any further action will be founded on Article 175 of the EC Treaty, which establishes the EU competence on environment²⁴.

4.2 Compliance with the principle of subsidiarity

Environmental policy is deemed to be a policy area where the exercise of competences is shared between the Community and the Member States. Therefore, the subsidiarity principle applies insofar as the proposal does not fall under the exclusive competence of the Community.

²⁰ COWI A/S, see annex.

²¹ CdR 254/2005 fin

²² COWI A/S, see annex.

²³ According to the criteria mentioned in the Protocol on the application of the subsidiarity & proportionality principles

²⁴ Since the options envisaged by the Green Paper could involve other policy areas e.g. internal market (for the implications of waste as a product), other legal basis (i.e. article 95 TEC) could be considered. However, since this document only draws up a set of options for the future, further considerations regarding legal basis should be left open for the moment these options materialise into actual legislative instruments.

The European Union has made a number of commitments (including the enactment of legislative instruments) regarding the protection of the environment, e.g. measures related to climate change, energy efficiency improvement, reduction of CO₂ emissions, or the use of renewable energy among others. In such cases, either the trans-national aspects of the problem or the better placement of the EU in order to set common targets and commitments have justified Community action in terms of subsidiarity. In the subject matter, the management of bio-waste, the same arguments could be applied when assessing the respect of the subsidiarity principle.

Notwithstanding the above, it should be pointed out that if further measures were to be adopted, the competences of local and regional authorities in the management of bio-waste should be duly taken into account in order to ensure a level of intervention fully respectful with the subsidiarity principle.

In particular, it is worth saying that for the case of biodegradable waste diverted from landfills, for example, there seems to be no single environmentally best option, because local factors shall be taken into consideration. Moreover, regarding the objective of increasing recycling and the envisaged option of setting either common or national bio-waste recycling targets, it must be said that it could be difficult or inappropriate to set a “one-size-fits-all” target and that an option of flexibility should be left open for the Member States (either at national, regional or local level). Finally, the possibility of setting up EU common rules for high quality compost and for treated bio-waste of lower quality could help achieve certainty on the internal market, which is highly recommended. On the other hand, setting rules at national level within a common framework could allow Member States to adapt detailed rules in line with regional or local considerations. However, it should be noticed that this second option could imply a risk of market fragmentation.

4.3 Compliance with the principle of proportionality

Since this Green Paper only draws up possible options for the future, it is not yet possible to make a full evaluation in order to assess their compliance in terms of proportionality.

However, regarding possible economic impacts of the envisaged options, it is worth saying that the capital and operating costs of municipal solid waste management and biological treatment of waste depend on multiple factors and vary regionally and locally. Therefore, local and regional factors, such as geological considerations and costs of locally available energy need to be taken into consideration. The justification of an EU action thus should be based on the results of a thorough impact assessment that can better take into consideration local and regional specific features.

Moreover, in the case of the possibility of imposing separate collection obligations in order to facilitate and increase recycling, the foreseen measure could entail new obligations for waste managers and authorities, and thus create additional costs and administrative burdens for enterprises and public administrations. This should be considered in balance with environmental benefits, not only in terms of proportionality, but also regarding the respect of the environmental precautionary principle.

4.4 Better Regulation

Considering the competences local and regional authorities have in the management of bio-waste in the European Union, the forthcoming impact assessment carried out by the European Commission should take account of any possible territorial impacts of Community action.

5. Content of the European Commission's Green Paper

The Green Paper explores options and opportunities in bio-waste management in the European Union and will contribute to the assessment of the need for legislative action. It addresses in particular the best level for action – EU, national or local – and asks stakeholders for evidence supporting their respective views.

Bio-waste – biodegradable garden, kitchen and food waste – accounts for around one third of municipal waste and has major potential impacts on the environment. When disposed of in landfill sites, it emits methane – a powerful greenhouse gas which is 23 times more potent than carbon dioxide and a major contributor to climate change. Energy recovered from bio-waste in the form of biogas or thermal energy will help in the fight against climate change, and quality compost can contribute greatly to healthy soil and biodiversity.

While waste management in the EU is governed by a substantial body of regulation, there may be room for further improvement in the area of bio-waste, which offers potential advantages as a source of renewable energy and recycled materials. The Green Paper includes an overview of the current bio-waste management practices in the EU, and looks at the benefits and drawbacks of these methods, taking into account environmental, economic and social issues.

In late 2009, the Commission intends to present its analysis of the responses received together with, if appropriate, its proposals and/or initiatives for an EU strategy on the management of bio-waste.

The Paper is intended to stimulate a debate among stakeholders and help the Commission assess the need for additional EU action. The next step will be an impact assessment of a possible legislative proposal, which will be carried out in 2009. A legislative proposal, if justified by the impact assessment, could be adopted in 2010.

The Green Paper puts forward eight questions, related to the issues of:

1. Better prevention of bio-waste: possible specific bio-waste prevention action at EU level
2. limiting landfilling: possible further restriction of the amount of biodegradable waste that is allowed on landfills beyond the targets already set in the EU Landfill Directive, at EU or national level
3. Treatment options for bio-waste diverted from landfill: need for strengthening specific options, wider and more consistent use of life-cycle assessment studies
4. Improving energy recovery: options for a valuable contribution to sustainable resource and waste management in the EU and meeting the EU's renewable energy targets
5. Increasing recycling: need for promoting bio-waste recycling and synergies between bio-waste recycling and energy recovery; need for EU or national bio-waste recycling targets; need for separate collection obligation
6. Contributing to Soil Improvement: In order to strengthen the use of compost/digestate: need for EU standards for high-quality compost and/or for treated bio-waste of lower quality, need for rules on use of compost/digestate (e.g. limits on pollutant concentration), need to limit use of compost (digestate) from mixed waste?
7. Operational (treatment) standards for small plants, which do not fall under the IPPC scope
8. regulatory obstacle preventing further developments and the introduction of the different bio-waste treatment techniques

6. Procedure

Responsible: Directorate-General for Environment (DG ENV), Commissioner DIMAS

Contact DG ENV: Mr Bartosz ZAMBRZYCKI, Mr Klaus KOEGLER, Head of Unit ENV.G.4
“Sustainable production and consumption”

Schedule: Exchange of views in the DEVE Commission on 17-18 February 2009; first discussion and adoption in the DEVE Commission on 7 May 2009; adoption in Plenary Session on 17/18 June 2009.

Rapporteur: Ms Mona-Lisa NORRMAN (SE/PES)

ANNEX

Related CoR Opinions

- Opinion on the **Promotion of renewable energy**, COM(2008) 19 final - 2008/0016 (COD), rapporteur Ms BAKER (UK/ALDE), CdR 160/2008 fin
- Opinion on the Communication “**Taking sustainable use of resources forward: a Thematic Strategy on the prevention and recycling of waste**”, COM(2005) 666 final, and on the **Proposal for a Directive of the European Parliament and of the Council on waste**, COM(2005) 667 final - 2005/0281 (COD), rapporteur: Mr Vejlstrup (DK/EPP), CdR 47/2006 fin
- Outlook report on the **Implementation of the Directive on the Landfill of Waste (1999/31/EC) at regional and local level**, rapporteur: Mr van Gelder (NL/EPP), CdR 254/2005 fin
- Opinion on the Communication **Towards a thematic strategy on the prevention and recycling of waste**, COM(2003) 301 final, rapporteur: Mr Condorelli (IT/ELDR), CdR 239/2003 fin
- Opinion on the **Proposal for a Directive of the European Parliament and of the Council on Waste Electrical and Electronic Equipment** and the **Proposal for a Directive of the European Parliament and the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment**, rapporteur Mr McKenna (IRL, AE), CdR 269/2000 fin
- Opinion on the **Proposal for a Council Directive on the incineration of waste**, COM(1998) 558 final, rapporteur: Mr Mikkelsen, CdR 447/98 fin
- Opinion on the **Proposal for a Council Directive on the landfill of waste**, COM(97) 105 final, rapporteur: Mr Mikkelsen, CdR 112/97 fin

Further documents:

Revised Waste Framework Directive 2008/98/EC of 19 November 2008, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:312:0003:0030:EN:PDF> (see mainly Article 22)

[Landfill Directive 1999/31/EC](#) (see mainly Article 5)

ACR+ - Association of Cities and Regions for Recycling and sustainable Resource management: Proceedings of the conference "The organic waste management in urban environment - New European challenges", 20/21 November 2008, Brussels;
http://www.acrplus.org/conf_organic_waste_proceedings

COMMITTEE OF THE REGIONS, 2006: Study on the implementation of the directive on the landfill of waste at regional and local level.

EUROPEAN COMMISSION: Website on Biodegradable Waste,

<http://ec.europa.eu/environment/waste/compost/index.htm>

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Accompanying the Green Paper on the management of bio-waste in the European Union,

COM(2008) 811 final, http://ec.europa.eu/environment/waste/compost/pdf/green_paper_annex.pdf

EUROPEAN COMMISSION, DG ENVIRONMENT, 2000: Success stories on composting and separate collection; http://ec.europa.eu/environment/waste/publications/pdf/compost_en.pdf

EUROPEAN COMMISSION, Joint Research Centre, Institute for Environment and Sustainability, Terms of Reference - Development of "European Life Cycle Thinking Guidelines for the Management of Municipal Biodegradable waste",

http://ec.europa.eu/environment/waste/pdf/tor_biowaste_guidelines.pdf and

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EEA - EUROPEAN ENVIRONMENTAL AGENCY, 2007: The road from landfilling to recycling: common destination, different routes; http://reports.eea.europa.eu/brochure_2007_4/en

COWI A/S, December 2004: Preliminary Impact Assessment for an Initiative on the Biological Treatment of Biodegradable Waste. Final Study Report,

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COLLADO, G., ACR+, 2008: Managing at source municipal organic waste in Europe – Outputs from the ACR+Biowaste Cluster, http://www.acrplus.org/conf_organic_waste_proceedings

EUNOMIA 2002: Economic analysis of options for managing biodegradable municipal waste;

http://ec.europa.eu/environment/waste/compost/pdf/econanalysis_finalreport.pdf

FEDERAL MINISTRY OF AGRICULTURE, FORESTRY, ENVIRONMENT AND WATER MANAGEMENT, AUSTRIA, AND EUROPEAN COMMISSION, 2003: Applying Compost - BENEFITS AND NEEDS, Seminar Proceedings, Brussels, 22 – 23 November 2001;

http://ec.europa.eu/environment/waste/pdf_comments/040119_proceedings.pdf

[ACR+ - Association of Cities and Regions for Recycling and sustainable Resource management,](#)

[European Composting Network](#)

[Organic Recovery and Biological Treatment - ORBIT](#)

[International Solid Waste Association \(ISWA\)](#)

[European Federation of Waste Management and Environmental Services \(FEAD\)](#)