position statement

Environment Agency

Sustainable management of biowastes

Composting – maximising the benefits and minimising the environmental impacts

Composting can play a very important role in diverting biodegradable wastes from landfill and in recovering value from them, provided that the process is carried out properly. Composting facilities that have poor quality feed stock, that are not operated correctly or which use unsuitable raw material have the potential to cause environmental pollution, including detriment to local amenities, harm to human health and to produce poor quality compost.

This position statement is aimed at local authorities and the composting industry and sets out the Environment Agency's views on commercial scale composting. It sets out what needs to be done to maximise its benefits whilst minimising the impact on the environment and human health. The statement is not aimed at individuals or institutions carrying out their own small scale composting, for example, householders or schools.

Key issues

We are concerned about the unacceptable impacts caused by composting sites if they are poorly managed and operated. In particular, they can:

- give rise to nuisance odours
- produce immature compost (which is likely to be malodorous), contaminated or otherwise poor quality compost
- catch fire
- expose people nearby to high concentrations of potentially harmful bioaerosols.

The location of sites, their design and their supporting infrastructure are also important factors in minimising the impact on the environment, human health and local amenities. We believe that problems can be exacerbated where there are contracts between local authorities and operators requiring operators to accept all the local authority waste delivered to them. Effective source segregation of waste is an essential part of proper site management. Some facilities get overloaded at certain times and/or have to take waste that is already decomposing and malodorous. Operators may also have to accept waste that is contaminated due to poor segregation. These factors cause problems for local amenities as well as affecting the final quality of output. They affect the public perception of composting and compost in a negative way.

Exempt composting sites have to be registered with us, but are subject to a much lower level of regulation as they are deemed to pose a lower risk. The scale and nature of composting operations covered by the current composting exemption is very wide. Our experience is that this lower level of regulation does not always reflect the impact of some exempt composting facilities.

We already require licence/permit applicants and those wishing to register exemptions to provide us with a site specific bioaerosol risk assessment where the proposed composting facility will be within 250 metres of dwellings or workplaces. These risk assessments need to demonstrate that bioaerosols from the proposed facility will not pose an unacceptable risk to human health. In practice we have found that many are of poor quality or are not sufficiently comprehensive.

Where the proposed facility is further than 250 metres from dwellings or workplaces and provided certain other criteria apply, licence applicants have been able to apply for a fixed licence for composting. This procedure has been simpler and cheaper than that for a site specific, bespoke licence. The fixed licence has a standard set of conditions designed to take into account the generic risks to the environment from such a facility. We have been finding, however, that our fixed licences for composting have not always been providing sufficient control to prevent unacceptable impacts on the environment.

Where the output from a composting process is waste (i.e. where it does not meet the Environment Agency/WRAP Compost Quality Protocol), its subsequent application to land also needs to be regulated by us, either under an exemption or Environmental Permit (Waste Licence prior to 6th April 2008).

We believe technology choice is a matter for operators, provided it gives adequate protection to health, amenities and the environment. Properly managed windrowing is a well established technology that can be perfectly acceptable for green waste. Where food or animal by-products are involved, in-vessel composting is required, giving good quality control over the initial rapid composting phase. Our experience is that operators are often not composting waste for long enough, leading to odour problems and poor quality outputs.

Our role

Our main role in composting is as the principal regulator for the recovery and disposal of waste. Most larger scale composting facilities require an Environmental Permit[1] before they can operate, whilst the medium and smaller scale ones are exempt from the need for a permit.

Solutions – what we call for:

We want to see an adequate network of composting sites that meet the needs of the locality, particularly in dealing with future demand for treatment capacity for source-segregated municipal wastes.

[1] The Environmental Permitting regime came into force on 6th April 2008, replacing and consolidating the previous regimes covering Waste Management Licences and Pollution Prevention Control permits.

- In supporting the above aim, we want to work with local authorities in their various roles as waste collection, disposal and planning authorities. We will provide guidance on composting, covering aspects such as the location of sites; acceptable waste types; the relationship between contract conditions and permitting requirements and the necessary infrastructure. We expect to have this ready later this year

- We want Environmental Permit and exemption registration applicants (for composting sites within 250 metres of dwellings or workplaces) to produce site specific bioaerosol risk assessments that are fit for purpose. We will be rigorous in rejecting them if they are not. We are improving and streamlining the way we deal with bioaerosol risk assessments and are producing guidance on them for applicants, which should be available later this year

- We would like all those involved in waste composting to see it as a way of producing quality compost rather than as a way of disposing of waste or solely boosting waste performance indicators. We encourage them to adopt the Compost Quality Protocol. We are aware that some operators may wish to partially compost biodegradable waste as a pre-treatment option for landfill. We regard this as biological treatment for disposal rather than composting and will regulate it accordingly

- The acceptance of unsuitable wastes for composting could seriously undermine the markets for quality compost and the efforts of those producing it. We want to work with the composting industry to provide more clarity on what wastes are suitable for composting, and will use the list of wastes in the Quality Protocol as a starting point. We consider that the segregation of municipal waste at source plays an important role in ensuring quality outputs from the composting process

- We expect operators to operate their sites in a way that minimises their impact on the environment and local amenities. The Composting Association has set out benchmark standards and procedures for the management and operation of composting sites[2] and guidance on ways of operating that prevent or minimise nuisance odours[3]. We want operators to work to these standards as a minimum. We have also been reviewing the conditions in our fixed licences for composting to ensure they provide appropriate protection for the environment and public health. We are introducing the revised requirements via the new system of standard rules permits from 6th April 2008 to coincide with the introduction of the Environmental Permitting regime

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- We want a more proportionate and effective regulatory control system for composting. We have been working with Government on the new Environmental Permitting Regulations and on their current exemption review to produce such a system. We are expecting the exemption review to be implemented in autumn 2009. We want the scope of the new composting exemption to be reduced considerably and would like to see many of the existing exempt facilities subject to standard rules permits in the future.

[2] The Composting Industry Code of Practice
[3] Industry guide for the prevention and control of odours at biowaste processing facilities

Background

The disposal of biodegradable wastes to landfill produces carbon dioxide, methane and leachate. Methane is a potent greenhouse gas with 23 times the global warming potential of carbon dioxide. Composting the right biodegradable wastes can produce a quality compost suitable for use as a soil improver and growing medium. Wastes that can be used include green wastes from parks and gardens as well as food wastes. There are two main technologies used in commercial composting, windrow and in-vessel. Both can be used for a range of wastes, but only in-vessel composting can be used when the feed stocks contain catering or other animal by-product wastes. With the proviso that it must be done properly, we support the use of composting as one of the ways of recovering valuable resources. Suitable municipal, commercial and industrial wastes streams can be used, reducing the amount of biodegradable waste going to landfill.

Municipal waste composting has grown over the last few years as many Local Authorities introduced separate green waste and, latterly, food waste collections. Industry has responded by developing new composting facilities, but growth is continuing and there is a demand for more composting capacity throughout England and Wales.

There need to be sufficient facilities available to meet the growing demand, so that the effective operation of existing plants is not undermined. It is also essential that these facilities are located, operated and regulated so that there is minimum impact on the environment and human health.

The use of Mechanical Biological Treatment (MBT) plants for treating un-segregated municipal waste is growing. These use various technologies and plant configurations and can produce a number of different waste stream outputs. One of the main ones is an organic-rich, fine material generically referred to as CLO (Compost-Like Outputs). We have a separate position statement on CLO.