

ABSTRACT

The Centre for Best Available Techniques (BAT) is founded by the Flemish Government, and is hosted by VITO. The BAT centre collects, evaluates and distributes information on environment friendly techniques. Moreover, it advises the Flemish authorities on how to translate this information into its environmental policy. Central in this translation is the concept “BAT” (Best Available Techniques). BAT corresponds to the techniques with the best environmental performance that can be introduced at a reasonable cost.

The aim of this report is to determine the BAT for composting and digestion plants. Based on the BAT selection, recommendations are formulated with respect to environmental permit regulation.

Composting and digestion plants are plants in which biodegradable materials are degraded by micro-organisms under controlled circumstances. For the determination of the BAT, differentiation is made in this report between 3 classes of plants, and 3 groups of BBT are determined:

- BAT for composting in open air;
- BAT for composting in closed systems;
- BAT for digestion.

4 specific types of composting and digestion plants are discussed more extensively in this report, e.g. with respect to the socio-economic aspects, the applied processes and the environmental aspects. These are:

- composting plants for greenwaste;
- composting plants for biowaste;
- digestion plants for biowaste;
- plants for production of mushroom substrate.

The scope of the report is however not limited to these 4 types of plants, but includes also other plants for composting or digestion of organic-biological materials and/or manure.

Odour emissions are a point of particular attention for composting and digestion plants. Therefore, this study pays much attention to measures that can be taken in these installations to reduce odour nuisance. These include a large number of process integrated measures, but also measures with respect to air collection and –treatment. The latter are only considered as BAT in cases where process integrated measures are not sufficient to reduce odour nuisance, taking account of the nature of the processed materials and the location of the plant.

Next to measures for reduction of odour nuisance, the BAT-report also determines the BAT for reduction of emissions of NH₃ and dust, protection of soil and groundwater, reduction of residues, reduction of energy consumption, and reduction of noise. For digestion plants, measures with respect to storage and treatment of the biogas are discussed as well.

The BAT selection in this study was based on plant visits, a literature survey, a technical and socio-economic study, cost calculations, and discussions with industry experts and authorities, The formal consultation was organised by means of an advisory committee.