Mechanical Biological Treatment

The basic processes and technologies of composting and anaerobic digestion, as described in the previous chapters, are usually used for specific or source-separated organic waste flows. However, in the 1990s mechanical biological waste treatment technologies (MBT) were developed for unsorted or residual waste (after some recyclables removed at the source). The concept was originally to reduce the amount of waste going to landfill, but MBT technologies are today also seen as plants recovering fuel as well as material fractions. As the name suggests the technology combines mechanical treatment technologies (screens, sieves, magnets, etc.) with biological technologies (composting, anaerobic digestion). Two main technologies are available: Mechanical biological pretreatment (MBP), which first removes an RDF fraction and then biologically treats the remaining waste before most of it is landfilled, and mechanical biological stabilization (MBS), which first composts the waste for drying prior to extraction of a large RDF fraction. Only a small fraction is landfilled. The latter technology is also referred to as biodrying. Within each of the two main technologies, a range of variations is available depending on waste received and routing of the RDF fraction. This chapter offers an introduction to the two technologies. Box 9.7.1 shows the types of MBT plants found in Germany.

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