Separately collected of waste

Selective collection means collecting a selected group of waste, i.e. paper, metals, plastics, glass, bulk waste and biodegradable municipal waste, including biodegradable packaging waste, for further processing.
The selective collection of the above-mentioned fractions results, among other things, from the need for EU countries to achieve the required levels of recycling and preparation for re-use of paper, metals, plastics and glass.

Residual waste

Residual waste includes waste remaining after selective collection of various waste fractions (i.e. biodegradable waste, glass and textiles, waste paper, plastic packaging, metal packaging, beverage packaging, etc.).
This waste is directed to MBT installations where the Refuse-derived fuel fraction (RDF - residual waste fraction >80 mm) and the organic fraction of municipal solid waste (OFMSW - residual waste fraction <80 mm) are separated.
The RDF fraction is directed to combustion as an alternative energy source. The OFMSW fraction is subjected to biological decomposition processes in aerobic (aerobic stabilization) or anaerobic (anaerobic stabilization) conditions. The product of aerobic and anaerobic stabilization is stabilized waste which, due to the contaminants it contains, i.e. glass, is sent to a landfill.

Composting and fermentation of waste

The new requirements for municipal waste specified in the Framework Directive indicate the intensification the selective collection of biowaste, because otherwise, it is impossible to achieve the expected levels of recycling, even with high recycling rates of raw material waste. This also involves the construction of new composting and/or biowaste fermentation facilities. Fertilizers which may constitute an alternative to mineral fertilizers become products of these processes .
Several factors should be taken into account when choosing a method for processing biowaste between composting and fermentation processes, including: type of substrate, economic parameters of the process and environmental factors. Taking into account the economic parameters, the use of fermentation processing is justified for the throughput of more than 20,000 m^3 Mg of waste, while composting is recommended for smaller throughputs below 15,000 m^3 Mg [7]. Considering the type of substrate, fermentation is recommended for the processing of kitchen waste, and composting for the processing of garden waste due to its porous structure. An important advantage of fermentation compared to composting is its low emission of pollutants into the atmosphere. Fermentation is also supported by the production of biogas, which ensures not only energy self-sufficiency of the process, but also, as a rule, a surplus of energy that can be sold.
The choice of the type of process should also take into account local and legal conditions, determined on the basis of:

- analysis of compost, gas and heat sales markets or their use for own purposes,
- emission and immission balance,
- quantitative and energy balances,
- surface requirements,

- operational potential.

However, it seems that due to a number of advantages in comparison to composting, methane digestion will play an increasingly important role, especially due to the need for increased share of renewable energy consumption.