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Option 7 Mechanical biological treatment

Mechanical biological treatment is a generic term for an integrated system comprising several mechanical and biological processes.

This process is run alongside a materials recovery facility to remove unsuitable materials. The materials that cannot be treated need to be sent elsewhere for processing or disposal.

The mechanical process involves the removal of recyclable materials, typically employing a range of automated separation technologies. The biological process focuses on the reduction of the biodegradable portion (including paper/cardboard), most likely using anaerobic digestion and/or aerobic composting.

Anaerobic digestion is a series of biological processes in which microorganisms break down biodegradable material in an enclosed space i.e. a tank with the absence of oxygen.

Composting involves the breakdown of organic material microbiologically with the presence of heat, oxygen and moisture.

Outputs from a mechanical biological treatment process may include:

- Low-quality recyclable material
- Stabilised organic material or compost-like output. This material is typically relatively dry and consistent. Potential uses include low-grade soil amendment or feedstock for conventional or advanced thermal treatment

Examples in operation

New Zealand: None

Australia: Yes, in New South Wales, Queensland and Western Australia, but in some states the final product is landfilled due to environmental regulations

Rest of the world: There are many examples, especially in Europe