

# Mechanical Biological Treatment (MBT) and Anaerobic Digestion (AD)

Five new MBT facilities; four with AD, will be used to treat residual (non recyclable) household waste from across Greater Manchester.



## So what is MBT?

Mechanical Biological Treatment is a name given to a waste treatment process that is used to treat residual waste. As the name suggests, MBT involves both mechanical and biological methods.

The 'mechanical' part refers to the processes that are used for preparing and separating the waste when it arrives at the plant. There are a number of waste preparation techniques, such as shredding, sieving, and screening which are used mainly to reduce the size of the waste and separate it into different sizes. Metals are also removed at this stage by magnets and eddy current separators to maximise recycling.

# Mechanical Biological Treatment (MBT) and Anaerobic Digestion (AD)



## How will it work in Greater Manchester?

Waste arrives at one of the facilities, where it is tipped into a large reception hall. It then goes to the mechanical treatment area, where, using some of the processes mentioned, it is separated into the following parts:

- Fine or organic - small particles of mainly organic and non-metallic materials
- Light - mainly non-recyclable plastic, paper, card and textiles
- Ferromagnetic metals - segregated for recycling
- Non-ferromagnetic metals - all other metals, also separated for recycling
- Heavy residue - mainly stones and similar materials, to be used as aggregate

The organic part is mixed with water and processed further to remove any remaining stones, grit or plastic, producing a slurry. The light material is incorporated into a High Calorific Value Solid Recovered Fuel (HCV-SRF) and the heavy residue is re-used as aggregate.

## So where does the biology come in?

The 'biological' part of MBT refers to the digesting of the organic part (slurry) using Anaerobic Digestion (AD). Across Greater Manchester, four MBT plants will use an AD process.

## What is Anaerobic Digestion (AD)?

This is a renewable energy technology that captures gas (methane) from the decomposition of organic materials (manure, slurry, sewage sludge, residual waste and food waste). By harnessing the natural process that occurs when organic matter is broken down by bacteria in a closed vessel, the biogas produced can be used as an energy source for both heat and power.

In Greater Manchester the slurry passes through a hydrolysis tank, after which it remains in the Anaerobic Digestion tanks for up to 25 days.

Biogas is produced by the digestion process and is collected in a gas chamber ready for use in a gas engine to create heat and power. The heat is used back in the process to keep the digestion process warm and the renewable power generated is exported to the National Grid to be used in people's homes.

The remaining product then goes through a de-watering process and is further dried to produce a compost like product or will be used as Low Calorific Value Solid Recovered Fuel (LCV-SRF).

A Combined Heat and Power (CHP) plant at Runcorn, Cheshire will use the HCV-RDF and LCV-RDF to produce electricity and steam, replacing non-renewable sources of energy.



For more information, please visit : [www.recycleforgreatermanchester.com](http://www.recycleforgreatermanchester.com) or contact:

Jennifer Baker | Communications Manager

T : 01204 374 220 | E : [communications@recycleforgreatermanchester.com](mailto:communications@recycleforgreatermanchester.com)