

Technology	Technology Class/Type	Technology Description	Input Waste Type(s)	Output Product(s)
<b>MECHANICAL SEPARATION TECHNOLOGIES</b>	<b>Material sorting</b>	These schemes use automated and manual sorting to separate mixed recyclable materials to groups of specific materials. The outputs are suitable for reuse, recycling or reprocessing.	Mixed dry recyclables, including: • Paper/cardboard • Packaging plastics, paper, glass, metals.  Industrial dry recyclables, including: • Paper/cardboard • Metals, plastics, glass • Timber, concrete, spoil	Reprocessable materials by type.
	<b>Waste Separation</b>	These technologies use a variety of physical processes, such as drums and pulverisers, to separate mixed residual wastes. The aim is to recover specific waste streams for further processing or reduced volume disposal.	Mixed residual waste.	Organic mass for biological organic processes.  High calorific material (RDF) for thermal processes or reduced volume landfill  Inert materials.  Metals.
<b>BIOLOGICAL TECHNOLOGIES</b>	<b>Land Application</b>	These schemes involve direct injection of organic wastes to increase the availability of nutrients in farm soils. This increases soil sustainability and crop yields. Typical waste materials are sewage sludge, agriculture wastes and grease trap wastes.	Agriculture wastes, sewage sludge, gypsum Specific organic wastes including . grease trap wastes.	Soil improvement
	<b>Open Windrow Composting</b>	These technologies involve decomposition of organic wastes through microbial activity under open, aerobic conditions. The compost product is stable and rich in nutrients and organic matter and is suitable as a soil conditioner.	Garden waste, sewage sludge.	Compost, soil conditioner
	<b>Vermicomposting</b>	These technologies use worms to consume organic wastes including sewage sludge, food and animal	Sewage sludge, food waste, garden waste.	Compost, soil conditioner.

		wastes. The product is high quality compost suitable for soil conditioning.		
	<b>Enclosed Composting</b>	Controlled atmosphere and moisture conditions are used in these technologies to improve the rate of organic waste decomposition (over open windrow composting) and control odours. Enclosed composting systems use drums, boxes, tunnels, silos or vessels as the core process technology. System controls provide for input of potentially odourous waste including food, sewage sludge and garden wastes, to produce good quality compost.	Mixed organic waste, including: <ul style="list-style-type: none"> <li>• Food waste</li> <li>• Garden waste.</li> </ul> Preseperated residual waste	Compost, soil conditioner. High calorific material (RDF) for thermal processes or reduced volume lanfill
	<b>Anaerobic Digestion</b>	Digestion involves controlled biological degradation of organic wastes by microbial activity in the absence of oxygen. Methane-rich gas is produced suitable as fuel for energy generation. A digestate sludge is also produced, which is suitable for enriching compost materials. Input preparation or source separation is required to ensure that waste is free of non organic contamination.	Mixed organic waste, including: <ul style="list-style-type: none"> <li>• Food waste.</li> <li>• Garden waste</li> </ul>	Biogas fuel/green energy.  Digestate material for compost
	<b>Fermentation</b>	Fermentation technologies involve biological degradation of organic wastes to produce a chemical feedstock or liquid fuel (usually ethanol). Primary	Agriculture wastes: Mixed organic waste, including *Food waste *Garden waste	Liquid fuel

		input application has been agriculture wastes, but recent developments take municipal organics including food waste and sewage sludge.		
<b>THERMAL TECHNOLOGIES</b>	<b>Incineration</b>	These mature technologies recover the calorific energy contained in residual wastes. Heat and steam for electricity generation is produced through mass combustion of the input waste. The products can be used for local heating and for energy input to the grid.	Mixed residual waste. High calorific specific wastes.  Special wastes, including: * clinical waste * hazardous waste	Heat/steam/energy  Waste destruction
	<b>Pyrolysis/Gasification</b>	In this group of technologies, waste materials are heated in the absence of oxygen to produce a liquid fuel (pyrolysis oil) which can then be separately gasified in the presence of oxygen to produce a fuel gas (syngas). This pyrolysis oil or syngas can in turn be used to power industrial engines producing energy for input to the grid, or as a chemical feedstock.	Sewage sludge, agriculture wastes. Mixed organic waste, including: *food waste *Garden waste *Paper pulp Preseperated residual waste	Pyrolysis oil or Syngas / green energy
	<b>Waste Melting</b>	These technologies use high temperatures to oxidise or reduce waste, and melt the residual material. The output is heat and fuel gas which can be used to power industrial engines producing energy for input to the grid. A further product is recyclable metal, and inert slag remains.	Metal wastes, hazardous waste. Mixed residual waste potential	Syngas / green energy. Heat energy. Metal residue.
<b>Landfill Technologies</b>	<b>Conventional Wet Landfill</b>	These mature technologies are used to facilitate waste	Mixed residual waste	Methane / green energy

		decomposition in a controlled manner. As the process of biodegradation takes place methane and carbon dioxide are released and a good proportion is captured as gas suitable as fuel for electricity generation.		
	<b>Conventional Dry Landfill</b>	Dry landfills are feasible in low precipitation climates, where minimisation of infiltration inhibits the biodegradation of waste. This reduces or eliminates leachate and landfill gas formation because of the dry stable conditions.	Mixed residual waste	Nil
	<b>Bioreactor Landfill</b>	In these landfills the rate of anaerobic decomposition is accelerated by recirculation of leachate and, in some cases, addition of sewage sludge. The process aims to improve gas production and electricity generation, and reduce the time taken to achieve stabilisation.	Mixed residual waste	Methane / green energy