

# THE COMPLETE BIODEGRADABLE WASTE SOLUTION

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## HISTORY

### WASTE MANAGEMENT TODAY

Removing bio-degradable materials from the waste stream before it gets into a landfill, has long been the ambition of the European Union. The concept is enshrined in the Landfill Directives.

Despite the fact that the government has spent vast sums of money, a constant stream of reports shows that the established waste industry has failed to come up with the necessary technology required to adequately cope with the legislation.

Instead, it has put its efforts into getting everyone to take a DIY approach, with segregation at source, linked to multiple collections. This approach is unsustainable in the long term not least because of the carbon footprint that the system generates.

If we do not produce a new answer to this dilemma soon, we will run out of landfill space and the lack of progress is going to harm everyone. Huge fines payable to Brussels, are in the offing from 2010 onwards, if we do not reduce the amount of bio-degradable waste being sent to landfill to below 75% of that disposed of in 1995.

The methods that have been tried so far are many and various:

### DIRTY MRFs

At first it was thought that machine power alone - Material Recycling Facilities (MRFs) would be able to sort it all out. Sadly, wet organic matter clogged up the works and 'dirty' MRFs failed.

### COMPOSTING

Composting' was announced as the next possible solution but little was done to expand the associated scientific horizons relating to advancing the science of rapid aerobic degradation.

The best thing would have been to compost the waste first before putting it into a MRF. That way, the organic fraction could have been broken down into friable compost, which would have been more easily segregated from the inorganic entities such as tin cans and bottles.

But no one in the industry seems to have been capable of making the intellectual leap this development required. However a very few inventors saw the need for compost towers.

### INCINERATION

This came next. Despite being supported by some significant business interests it was not well received by the

public. 60% of planning applications duly failed due to public pressure. We believe they will continue to do so as there is a fundamental fear that, for all the controls and advances in that technology, burning waste risks polluting our atmosphere.

Nevertheless, 'waste to energy' plants will continue to be a feature of the waste management structure not least a means of final destruction of 'compost' that is cross contaminated with common chemicals. However, there will always be a need to remove metals and plastics from the 'waste fuel' supplied, if true recycling of our increasingly scarce resources is to be achieved.

### PYROLYSIS

Pyrolysis is a way of baking waste in the virtual absence of oxygen. Currently it is expensive to operate and is largely used for clinical waste. However, control of the off gasses is 'state of the art'. The off-gasses are cooled very quickly to avoid the creation of the serious pollutants dioxins and furans. There are two systems one operates at around 1200 centigrade, the other close to 850 centigrade.

### ANAEROBIC TREATMENT

This is an in-vessel treatment for mixed waste that is long been used for sewage waste in septic tanks and municipal treatment works. It is a spontaneous biological process that operate in the absence of oxygen. It reduces the waste mass as it produces a gas known as methane. This can be used as a fuel. A 'cake' of organic matter is also produced when it is used for sewage treatment. This is often spread on land to dry.

### AUTOCLAVING

This process sterilises the waste by heating it in the absence of air. It is energy intensive even when energy recovery is around 50%. 70% of the output is a wet organic fibre with a moisture content of around 58%.

The industry still has problems with drying this material. However, it could be dealt with by in-vessel composting. Where the process is followed by anaerobic digestion the system recycles 17% of the waste flow. 58% of the remaining solid waste output can be composted, whilst around 30% goes to landfill.

### MBT

Mechanical biological treatment is a generic name for a number of complex systems that involve mixture of methods. All of them require some form of "pre-treatment" of the wastes that involves some form of human intervention. Such intervention is a third world answer to a first world problem.

### THE REVOLUTIONARY SBS INVENTION

We believe that there is another way. We have built it. We have tested it and it works.