

**Environmental Report for the
Strategic Environmental
Assessment of the Joint
Residual Municipal Waste
Management Strategy for the
West of England**

Executive Summary

January 2007


West of England Partnership

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For and on behalf of Environmental Resources Management
Approved by: Dr David Ackroyd _____
Signed:  _____
Position: Partner _____
Date: 19 th January 2007 _____

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EXECUTIVE SUMMARY

This Environmental Report sets out the results of a Strategic Environmental Assessment (SEA) of the draft Joint Residual Municipal Waste Management Strategy (JRMWMS) for the West of England. The JRMWMS will be a key document setting the framework for how municipal waste will be managed in the West of England over the next 20 years. The Environmental Report sets out the results of the SEA, showing the likely significant impacts of implementing the JRMWMS and of the technology options which have been considered as part of its development. **Comments are invited on the Environmental Report as well as on the draft JRMWMS.**

Likely Significant Effects of the Technology Options

The following options for residual treatment technologies were considered:

- Energy from Waste (EfW)
- Biological Mechanical Treatment + 3rd Party Thermal Treatment of Solid Recovered Fuel (SRF) + In-Vessel Composting of waste derived compost
- Mechanical Biological Treatment + 3rd Party Thermal Treatment of SRF + Landfill of stabilised output
- Autoclave + Anaerobic Digestion of Fibres
- Mechanical Treatment + 3rd Party Thermal Treatment of SRF + Anaerobic Digestion of waste-derived compost + maturation of digested compost product
- Autoclave + Thermal Treatment of Fibre
- Pyrolysis / Gasification (with fuel preparation)

The SEA shows that energy from waste and pyrolysis/gasification both perform well relative to the other technologies in terms of the estimated costs and in minimising potential amenity impacts. They will also require the fewest vehicle movements. Pyrolysis/gasification has a more positive energy balance than energy from waste and potentially also will generate more renewable energy. It also is likely to have the most positive effect on air emissions of the options. However, neither energy from waste nor pyrolysis/gasification perform particularly well on greenhouse gas emissions, where biological and mechanical treatment with thermal treatment of the residue performs best. Autoclave with anaerobic digestion gives the highest recycling levels and most effective implementation of the waste hierarchy, and unlike other options will produce no additional hazardous waste being a non-thermal option. Biological/mechanical treatment options are unlikely to achieve sub-regional self-sufficiency in waste management capacity.

Likely Significant Effects of the Policies

The strategy explicitly aims to promote the waste hierarchy, although it only covers policy on recovery and disposal. The landfill of waste, including

biodegradable waste, will be reduced and recovery of resources increased. This is likely to include recovery of energy, although this is not explicit in the policies and is dependent on the choice of residual treatment technology. Disposing of waste in the nearest appropriate installation will help to reduce transport distances. These commitments will all contribute to a probable reduction in greenhouse gas emissions.

Increasing the need for residual treatment capacity has an unclear effect on air quality, however there is a more general commitment to managing waste without risk to air. It is unlikely that waste management activities will significantly affect health if facilities are well-managed, and there is an explicit commitment to protect human health. Reducing landfill should reduce the risk of adverse amenity effects from landfill, although there is potential for adverse impacts on amenity from increased vehicle movements, particularly when considered alongside the expected increase in recycling which is also likely to increase traffic movements.

Increasing waste treatment in preference to landfill will require new economic enterprises which will help to promote local economic development and may also help to stimulate innovation for more sustainable waste management.

The strategy should promote public participation in decisions on residual waste management and encourage communities to take increased responsibility for waste. The commitment to disposing of waste in the nearest appropriate installation will also support this objective.

The strategy makes a clear commitment to managing waste without risk to water, soil, air, plants and animals. This should help to ensure that there are no impacts on biodiversity. However, developing new residual treatment capacity could have adverse impacts in terms of increased air emissions and landtake. The significance of effects is unknown and also location-dependent to an extent.

Mitigation and Enhancement

Recommendations are made for ways in which the JRMWMS can be amended to mitigate or enhance the expected impacts. These include:

- a commitment to sustainable as well as efficient recovery of resources;
- recognition of the benefits of energy efficiency in waste management and of the importance of minimising greenhouse gas emissions;
- inclusion of policy to promote public awareness and information on waste management issues.