

**Brief Assessment Of The Best Practicable
Environmental Option
(BPEO)**

**Proposed MBT Facility
Waste Management Park, Ely Road, Waterbeach**

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Proposed Mechanical Biological Treatment Facility
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1.0 Introduction

1.1 The need to demonstrate that a proposal was the Best Practicable Environmental Option (BPEO) for waste planning was introduced in Planning Policy Guidance Note 10, Planning and Waste Management (PPG10). This document has since been replaced by Planning Policy Statement 10, Planning for Sustainable Waste Management (PPS10) which no longer requires proposals to demonstrate BPEO. However, the current adopted Waste Local Plan for the County still includes this requirement.

Policy WLP1 states ‘

“To achieve sustainable waste management all proposals for waste development will be considered in the context of achieving the best practicable environmental option taking into account regional self-sufficiency, the proximity principle and the waste hierarchy.”

1.2 This statement is therefore included to provide a brief summary of why it is considered the proposal is the BPEO for providing sustainable waste management for the County.

1.3 The BPEO process seeks to identify the preferred option which provides the optimum balance in terms of emissions and discharges to land, air and water, in order to minimise harm and ensure the protection of the environment. The process also has to be realistic in monetary terms taking account of what is both affordable and practicable.

1.4 The main options for treatment of mixed waste are :

1. Landfill
2. Mechanical Biological Treatment (MBT)
3. Energy from Waste i.e. Incineration/pyrolysis/gasification

1.5 The summary below indicates why it is considered that the MBT plant proposed is the best solution for Cambridgeshire’s municipal waste.

2.0 Assessment of Issues

Compliance with Policy

- 2.1 The site is allocated as a major waste management facility in Policy WLP18 of the Cambridgeshire and Peterborough Waste Local Plan. The site also has an existing planning permission for the treatment of mixed household waste through a type of mechanical biological treatment. The site is safeguarded in the Minerals and Waste Development Plan Document Preferred Options.
- 2.2 The proposal seeks to maximise the recycling and recovery of waste and minimise the amount going to landfill thus complying with the waste hierarchy. The proposal also places emphasis on moving waste up the waste hierarchy by the provision of an Education/Visitors Centre.
- 2.3 The site is situated close to main urban areas of Cambridge and Ely. Other main centres are served by transfer stations to bulk up the waste prior to its transportation to the facility. The site also has a catchment restriction which restricts waste from being imported from outside a radius of the site. The facility has been sized to process Cambridgeshire's waste for the next 28 years thus complying with the proximity principle and achieving County self sufficiency to help the region achieve regional self sufficiency.

Air Quality

- 2.4 The proposed technology involves the processing of waste in a controlled environment. All air passes through a biofilter before its release to atmosphere. All vehicles will travel on hardened surfaces or within buildings which will minimise dust emissions.
- 2.5 Currently this waste is landfilled at the Waterbeach landfill site. Although the landfilling is carried out in fully engineered cells, these cells stay open for approximately 12 months before being capped. During this time the breakdown of the waste results in the emission of odours from the site. The movement of the waste to the cells and the tipping of the material also results in dust emissions from the operations.
- 2.6 The burning of the waste in an energy from waste plant will also result in the controlled release of emissions. There is unlikely to be any increase in dust emissions as the process would be within buildings and on hardened surfaces which can be kept clean.

Land And Aquatic Environment

- 2.7 The facility is contained within buildings with sealed drainage systems to ensure there is no release of the waste to land or groundwater. Any liquids within the

process is recirculated through the waste. The composting process is a net user of water as the heat generated in the composting process dries the material out. The process also produces a material which could be used on the restoration of brownfield sites.

- 2.8 The continuation of landfilling waste requires large voids to be filled leaving those areas with limited afteruse and long term liabilities. The site would have to be continually monitored to ensure there is no leakage to surface or groundwater. The site also requires the continual management of leachate from the waste.
- 2.9 The burning of waste ensures the processing of waste in buildings with a sealed drainage system. No liquids are produced from the process.

Global Change – Production Of Greenhouse Gases (CH₄, CO₂)

- 2.10 The production of greenhouse gases is reduced through the processing of waste in a controlled environment. The pre-processing of the material allows separation of the biodegradable element of the waste allowing the proposed MBT plant to be designed to compost the waste in optimal conditions. This produces CO₂ and CH₄ but at a reduced level to landfilling.
- 2.11 Current landfill practices result in a compacted waste mass. In that environment, the biodegradable fraction can only break down in anaerobic conditions resulting in the production of high levels of methane. Whilst this gas has to be collected it is not practical to ensure that there is no release of landfill gas to the environment during the filling of each cell. Methane is a more potent greenhouse gas than CO₂.
- 2.12 The burning of the waste produces gases in a controlled environment. This produces large amounts of CO₂.

Local Amenity

- 2.13 The processing of waste in a controlled environment and limiting the amount of waste required to be landfilled will reduce impacts on local amenity. The proposal will result in reduced litter, odour and noise emissions compared with current operations on site.
- 2.14 The continuation of landfilling the majority of waste will result in a continuation of current noise and odour levels and issues with litter and dust in the surrounding areas.
- 2.15 The provision of an energy from waste plant may result in a much larger facility being provided which may require the importation of waste from outside the region in order to make such a facility economically viable. The operation within

buildings is likely to reduce noise and odour emissions. However there is a perception that such facilities pose a health risk.

Natural Heritage

- 2.16 The site is not within any special landscape designation or close to any designated sites for nature conservation. The proposed facility has been designed to minimise the impact on the surrounding area by a layout which is screened from public views, careful use of materials and colours and positioning of the three buildings.
- 2.17 The landfilling of waste has a temporary negative impact on the landscape. It can have adverse impacts for natural ecosystems by the introduction of scavengers such as seagulls to the local environment.
- 2.18 A facility for the burning of waste is usually accompanied by taller buildings and a large chimney required to release emissions which would have an impact on the landscape.

Cultural Heritage

- 2.19 The design of the facility has been carefully considered so as not to have a detrimental impact on the setting of Denny Abbey Scheduled Ancient Monument. All required archaeological excavations would be carried out prior to any works recommencing on site.
- 2.20 The continual landfilling of waste would have a limited impact on Denny Abbey.
- 2.21 An energy from waste plant usually involves much taller buildings and a large chimney required to release emissions which may have an impact on the setting of Denny Abbey. All archaeological excavations would be required to be carried out prior to any works starting on site.

Non-Renewable Resources

- 2.22 Landfill gas will be utilised for the running of the MBT plant where this not possible power will be sought from renewable sources. The Education Centre will utilise solar power and recycled materials will be utilised where possible. The pre-processing will also produce a Refuse Derived Fuel (RDF) for use as an alternative to burning coal in cement kilns or power stations.
- 2.23 Landfill gas can be collected and used to run gas engines to produce electricity. Natural clay is used for engineering purposes.

- 2.24 The burning of waste produces a renewable energy in a controlled environment which can maximise energy recovery. Significant resources would be required to build a facility.

Risk Of Accidents

- 2.25 The technology is simple, robust and well proven. The mechanical operation is a system of conveyor, screens, magnets and eddy current separators and the biological element is composting with a mechanical turning wheel. The system is mechanically controlled with the ability to find faults and trouble shoot individual areas of the plant. There are clear designated areas for heavy vehicles and cars.
- 2.26 The landfill is an unstable surface which is a dangerous for most vehicles. There can also be slippage of cell walls.
- 2.27 Energy from waste plants are much more technologically complex and therefore have a greater risk of breakdown.

Impact On Local Economy

- 2.28 The facility will require more operators than currently required for the running of the landfill site and therefore an increase in local jobs. The facility will also produce recyclable products which can be sold locally for processing.
- 2.29 The number of staff employed in the running of the landfill is unlikely to increase. No resources are recovered in the operation.
- 2.30 An energy from waste plant is likely to require a greater number of operators than a landfill site. However, the provision of such a facility is likely to have a negative effect on the further development of other local employment areas such as the Cambridge Research Park.

Employment

- 2.31 The same comments apply as above.

Producer Responsibility

- 2.31 The controlled environment would ensure that any emissions from the plant can be easily identified and rectified.
- 2.31 The less controlled environment of a landfill results in a more difficult task to control emissions.
- 2.32 The controlled environment would ensure that any emissions from the plant can be easily identified and rectified.

Public Acceptability

- 2.33 The MBT facility proposed is a simple process which the public can view and understand. The majority of the public wish to see more waste recycled and there is also less fear in composting the organic fraction of waste.
- 2.33 Landfill has a negative response as it may not involve recovering any recyclables and does not view waste as a resource.
- 2.34 There is a fear of any sort of energy from waste facility which involves burning of waste.

Impact On Skills Base

- 2.35 Each technology involves a different skills base, and it is not considered that any one has a greater benefit than another, although the MBT and energy from waste plant would require more technicians to be locally based.

Social Implications

- 2.36 The proposal will result in long term security of a local business with an increase in local jobs. The proposal also includes an Education/Visitors Centre.
- 2.37 The continuation of landfilling will result in little change to the existing situation and will continue to have a negative impact on the local area. It is also a finite resource which cannot continue for the long term filling at current rates.
- 2.38 An energy from waste plant would create considerable concern for the local community. It may result in an increase in the importation of waste from outside the region.

Best Use Of Existing Resources

- 2.39 The MBT plant seeks to recover recyclable materials remaining in the mixed waste, produce a refuse derived fuel and a compost product. The construction of the facility proposes to minimise the use of natural resources.
- 2.40 The landfilling of waste does not recover any resources except for the recovery of landfill gas.
- 2.41 An energy from waste plant requires a constant flow of material. Recyclable materials are required to achieve the required calorific feedstock.

Practical Deliverability

- 2.42 The facility can be built over an 18 month period. It is a simple process easily operated and maintained; it meets all the requirements of European and national targets.
- 2.43 The continuation of landfilling is relatively easily deliverable in the short term however the available void in the County will soon be filled up making it more difficult to achieve for the long term.
- 2.44 The provision of an energy from waste plant normally takes a considerable period to build. The acceptance of such a facility in the local area would be difficult to achieve and inevitably slow the process to deliver.

Technical Feasibility

- 2.45 As explained above the MBT facility is simple and robust. There are a number of these facilities currently operating throughout Europe although there are currently none of this type of MBT plant operating in the UK.
- 2.46 The landfilling of mixed waste is well proven as a means of disposal of waste. The site is underlain by clay suitable for all necessary engineering requirements.
- 2.47 The burning of waste through incineration is well proven in the UK as well as throughout Europe. The treatment of mixed household waste through pyrolysis or gasification if not proven on a commercial scale.

3.0 Conclusion

- 3.1 The continuation of landfilling is not considered an option. It is at the bottom of the waste hierarchy, voids are filling up and European Directive requires a movement away from the reliance on landfill to more sustainable waste management. Energy from waste is technically proven, allows greater energy recover and under strict requirements would have reduced emissions however, is not considered the best option for Cambridgeshire. The county is predominately rural where waste tonnages are fairly low and would not justify the capital expenditure required for a large energy from waste plant which may result in waste being imported from outside the region. Such a facility is unlikely to offer the same benefits to maximise recycling and would also be much more difficult to deliver within the timescales required for meeting the targets. An MBT option meets all the required targets, maximises recycling can be delivered within the required timescale with less impact on the local environment.