

Agenda Item No:

**NORTH LONDON WASTE AUTHORITY**

**REPORT TITLE:**

**CONSULTATIONS ON THE DRAFT LANDFILL (ENGLAND AND WALES) REGULATIONS 2005 AND ASSESSING THE DIVERSION OF BIODEGRADABLE MUNICIPAL WASTE FROM LANDFILL BY M.B.T. AND OTHER OPTIONS**

**REPORT OF:**

**HEAD OF WASTE STRATEGY AND CONTRACTS**

**FOR SUBMISSION TO:**

**AUTHORITY MEETING**

**DATE:**

**9<sup>th</sup> February 2005**

**SUMMARY OF REPORT:**

This report advises Members of two current highly technical consultations. These cover proposed changes to the Landfill (England and Wales) Regulations and how the Environment Agency will monitor the performance of Mechanical Biological Treatment Plants and other technologies in reducing the biodegradable content of MSW subsequently sent to landfill.

**RECOMMENDATION**

It is recommended that the Authority approves the responses to the consultation papers set out in this report.

**Signed by Head of Waste Strategy and Contracts**

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**Date:**.....

## **1.0 INTRODUCTION.**

- 1.1 The Authority has been asked to comment on two highly technical consultation documents that will affect the management of waste that is sent to landfill. One document has been issued by DEFRA on behalf of the Government and the other by the Environment Agency.
- 1.2 The Government is currently consulting on the proposed Landfill (England and Wales) Regulations 2005. The proposed Regulations will mostly have an indirect impact on the Authority, in administrative and financial ways. The consultation makes a number of further changes to the Landfill (England and Wales) Regulations 2002 (as amended) and implement the technical and regulatory requirements of the 1999 Landfill Directive.
- 1.3 The Environment Agency has requested comments on the subject of "Assessing the diversion of biodegradable municipal waste from landfill by mechanical biological treatment and other options". This is a part of the mechanism for controlling the Landfill Allowance Trading Scheme (LATS). It is also important to the Authority as the North London Joint Waste Strategy sets out the need for such a facility to supplement the Partners' recycling, composting and recovery activities for full compliance with the LATS scheme.

## **2.0 PROPOSED LANDFILL (ENGLAND AND WALES) REGULATIONS 2005.**

- 2.1 The Government / DEFRA consultation seeks views on three technical issues and four legislative issues.
- 2.2 The technical issues are:
  - i) Limit values and test methods for hazardous monolithic wastes [hazardous wastes that have been previously treated to produce a "rock-like" material] for disposal in landfills for hazardous waste; and for stable and non-reactive hazardous and non-hazardous monolithic waste for disposal in separate cells at landfills for non-hazardous wastes. [N.B. This is a novel waste treatment technology that is still at a very early stage of development];
  - ii) Criteria for stable non-reactive granular wastes [treated wastes that are in a granular form] in separate cells at landfills for non-hazardous waste to ensure it will have sufficient physical stability and load bearing capacity; and
  - iii) Limit values for Polycyclic Aromatic Hydrocarbons (PAHs) [e.g. coal tar wastes from gas works] at landfills for inert waste.

2.3 The legislative issues are:

- i) How the waste producer's responsibility to ensure that the waste is properly described should be implemented;
- ii) A proposed alternative view on applying the exclusion from the Landfill Directive to the disposal of non-hazardous wet dredgings from watercourses;
- iii) Proposed implementation dates for the ban on landfilling certain non-hazardous wastes and the requirement for all non-hazardous waste going to landfill to be pre-treated;
- iv) Extending the risk assessment option allowed for in the Council Directive to cover individual waste types destined for mono-fill separate cells in hazardous waste landfill sites.

2.4 The Authority must submit responses to the consultation to DEFRA for consideration by 28 February 2005.

2.5 The consultation document asks for views on eleven separate questions. The questions are summarised below with the proposed answers. Members are requested to consider the questions and advise whether the answers are considered suitable.

2.6 The full consultation paper is thirty-one pages in length and therefore is not reproduced here. If Members would like to see a full copy it can be provided on request or can be downloaded from the Internet at the following address:

<http://www.defra.gov.uk/corporate/consult/landfillregs%2Drev/landfill-consult.pdf>

2.7 The questions posed in the consultation paper and the suggested responses are detailed in the following paragraphs.

## **2.8 Question 1.**

2.8.1 The Government proposes to require waste producers to provide a written description of the waste containing the following information:

- a. The source of the waste
- b. The processes producing the waste
- c. The appearance of the waste (including smell, colour, consistency and physical form).
- d. The Code applicable under the European Waste Catalogue.
- e. For hazardous waste, the properties that make it hazardous.
- f. Evidence that the waste is not prohibited from being deposited in the landfill to which it is being consigned.
- g. Whether the waste can be recycled or recovered.

2.8.2 There is no requirement to duplicate information that has already been provided and so paperwork already required by other legislation can be adapted to suit.

2.8.3 This question will affect the Authority and the constituent waste collection authorities that would be required to provide this information on behalf of householders and obtain this information from commercial and industrial waste producers from whom waste is collected for subsequent transfer to landfill via LondonWaste Ltd.

2.8.4 The question being asked is:

**“Do you agree that this is the best way of transposing the producer obligation requirement? (If not, please say why and set out a proposal that in your view better meets the requirements – e.g. apply the basic characterisation requirements to all producers subject only to their being able to provide a guarantee that the waste won’t subsequently be landfilled.”**

2.8.5 The proposed answer is:

“The Authority considers that it would be impractical to collect the stated information in relation to municipal wastes. Specific wastes cannot practically be traced back from deposit at landfill through multi-user waste transfer stations and a collection round to a single waste producer. The proposal may be suitable for industrial waste producers producing a simple waste stream that is transported directly to landfill. In addition, it may be beneficial to review other statutory guidance and possibly regulations e.g. Duty of Care Regulations 1991, that require written descriptions of the waste to ensure a clear and consistent requirement.”

## **2.9 Question 2.**

2.9.1 It is necessary to apply the same standards to monolithic and granular wastes sent to landfill and so there are proposed standards and testing regimes for the leachability of both monolithic and granular wastes to be sent to landfill.

2.9.2 This question will not directly affect the Authority, as neither it nor LondonWaste Ltd currently have an interest in the operation of any landfill sites nor are there any current plans to produce monolithic or granular wastes to be sent to landfill.

2.9.3 The question is:

**“Do you agree that the levels chosen provide equivalent protection as WAC [Waste Acceptance Criteria] values for granular waste and are the proposed testing procedures for monolithic wastes appropriate?”**

2.9.4 The proposed answer is:

“The Authority currently has no direct interest in such waste treatment processes that could be affected by this proposal and hence has no comment to make.”

## **2.10 Questions 3 & 4**

2.10.1 Member states are required to ensure that landfill sites are engineered to ensure that they have sufficient physical stability and load bearing capacity. Further they must ensure that hazardous monolithic wastes are stable and non-reactive before they are deposited in landfill sites. The draft regulations propose engineering standards to be applied and a testing regime to be introduced.

2.10.2 This question will not directly affect the Authority, as neither it nor LondonWaste Ltd currently have an interest in the operation of any landfill sites or any plans to produce monolithic wastes that could be sent to landfill.

2.10.3 The questions are:

**“Do you agree that the proposed load bearing capacity for cohesive materials should be not less than 50 kPa [kilopascals – a unit of pressure] and with the proposed way of measuring undrained shear strength? Please provide reasons if you have alternative proposals.”**

and:

**“Do you agree with the proposed unconfined compressive strength for monolithic wastes should be not less than 1.5 Mpa [Megapascals – one megapascal is one thousand kilopascals], and with the proposed test method? Please provide reasons if you have alternative proposals.”**

2.10.4 The proposed answers to both questions are:

“The Authority currently has no direct interest in waste treatment processes that could be affected by this proposal and hence has no comment to make.”

## **2.11 Questions 5 and 6.**

2.11.1 The Government is required to set limits on the levels of polyaromatic hydrocarbons (PAHs) that are accepted for disposal at inert waste sites. This family of chemicals is a common contaminant in soils excavated on sites that have previously been used for industrial purposes e.g gasworks. A single limit value to control 17 different PAHs rather than separate values for each chemical is proposed. The limit must lie between 100 and 150 mg/kg and a value of 100 mg/kg is proposed.

2.11.2 The questions are:

**“Do you agree with the proposal to have just one limit value to cover all 17 PAHs? Please provide reasons to support alternative proposals.”**

and:

**“If so, do you feel that the proposed value of 100 mg/kg is the correct value? If not, please suggest an alternative value with reasons.”**

2.11.3 The suggested answer to question 5 is:

“The Authority agrees with the proposal to have a single limit to cover all 17 polyaromatic hydrocarbons. This will reduce the cost of monitoring, increase reproducibility and takes a realistic view of the environmental impact of this class of chemicals.”

and for question 6 is

“The proposed level of 100 mg/kg is considered to be a sensible value for waste permitted for disposal at inert landfill sites.”

## **2.12 Questions 7, 8 and 9.**

2.12.1 The spreading of certain dredged wastes on land for the purposes of fertilisation and improvement is exempt from the scope of the Landfill Directive. This spreading includes the deposit of dredged material on the banks of watercourses from which it has been removed. The Government is concerned that the current regulations lack clarity and are proposing to amend both legislation and guidance to ensure that watercourses can be properly managed to prevent environmental harm from flooding and silting.

2.12.2 The questions posed are:

**“Do you agree with the Government’s view that it is necessary to make this change to the 2002 Regulations to put the legal position in respect of wet dredgings beyond doubt?”**

**“Do you think that further guidance is necessary?”**

**“Are there circumstances whereby this activity may cause environmental problems of the type which the Directive seeks to address?”**

2.12.3 The proposed response to this question is:

“The Authority currently has no direct interest in wastes that could be affected by this proposal and hence has no comment to make on the proposals.”

## **2.13 Question 10.**

2.13.1 The Government needs to set a date to implement some of the requirements of the Landfill Directive that are not already specified. These include dates for the implementation of regulations to control

- a) the treatment of non-hazardous waste prior to landfilling
- b) a ban on liquid wastes at non-hazardous landfill sites
- c) a ban on other wastes at non-hazardous sites e.g. tyres.

2.13.2 These requirements must be implemented as soon as possible but with regard to the practical difficulties involved in changing the disposal strategy for particular waste types.

2.13.3 Ministers have already determined that a) and b) above will be implemented on the same date and that two years notice will be given of this date. It is therefore proposed that all three bans should be implemented on 30 October 2007. This coincides with the deadline for all permitted landfill sites to meet the requirements of the Directive.

2.13.4 The question posed is:

**“Do you have any comments on the Government’s view that there should be one date for implementation of the requirements listed (above) and that the date should be 30 October 2007?”**

2.13.5 The suggested response is as follows:

“The Authority considers it to be prudent to make a single date for the implementation of the Regulations. The actual date selected should take into account the views of industry on the likelihood of available capacity across the country on the date of implementation. This should be determined by consultation with service providers in advance of setting a date for implementation.

Defra should consult the industry on whether the available guidance is sufficient to allow the necessary investment decisions to be made. If this is not the case, the Department should avoid making Regulations until the industry can give informed comments on the deliverability of appropriate solutions.”

## **2.14 Question 11.**

2.14.1 **Following an earlier consultation the Government has decided to take a risk based approach to setting individual limit values for materials permitted at particular hazardous monofill landfill sites. The Government is now considering extending this to individual waste types destined for mono-fill separate cells in hazardous waste landfill sites.**

2.14.2 The consultation document asks:

**“Are you in favour of extending the risk assessment option to include individual waste types destined for mono-fill separate cells in hazardous waste landfills?”**

2.14.3 The recommended answer is:

“The Authority would support the extension of the risk assessment option as long as the Environment Agency is properly and adequately resourced. The EA requires sufficient resources to properly check the risk assessments submitted by operators and also to ensure that operations are conducted in accordance with the risk assessment.”

## **2.15 Partial Regulatory Impact Assessment.**

2.15.1 The RIA is an assessment of the implications and costs associated with the proposed changes to the legislation.

2.15.2 The Government calculates that overall the cost of implementing the Landfill Directive will increase the cost to the waste producer as new treatment plants will be required. However the effect of this particular consultation could be to actually marginally reduce the costs that are already anticipated, as there are certain savings that could be made by adopting some of the proposals described above. Overall the effect on the Authority is expected to be negligible.

2.15.3 The suggested comment on the RIA is:

“The Authority has no further comment to make on the partial regulatory impact assessment included in the consultation documentation.”

### **3.0 ASSESSING THE DIVERSION OF BIODEGRADABLE MUNICIPAL WASTE FROM LANDFILL BY MECHANICAL BIOLOGICAL TREATMENT AND OTHER OPTIONS.**

3.1 The Environment Agency has a statutory duty under the Waste and Emissions Trading Act 2003 to determine the performance of each waste disposal authority in meeting their individual landfill allowance targets every year.

3.2 The Agency is currently preparing it's strategy for discharging this duty and has asked for comments on eleven questions relating to the measurement of the biodegradability of waste that has been pre-treated e.g. by an MBT process before disposal to landfill. The inclusion of a 250,000 tonnes per year MBT facility in the North London Joint Waste Strategy means that decisions taken now are likely to have an effect on the Authority and its Partners in the future.

3.3 Responses to the consultation document must be returned to the EA by 21 February 2005. A report on the consultation will be published on the Agency's website in March/April 2005 and guidance will be published in Spring 2005.

3.4 The questions posed in the consultation paper and the suggested responses are detailed in the following paragraphs.

3.5 The full consultation paper is twenty-nine pages in length and therefore is not reproduced here. If Members would like to see a full copy it can be provided on request or can be downloaded from the Internet at the following address:

<http://www.environment-agency.gov.uk/yourenv/consultations>

### **3.6 Question 1.**

3.6.1 The Agency considers that it is important that the samples tested are representative of the waste stream being characterised. Municipal waste is highly variable in composition and so a sampling methodology was devised to increase comparability between samples. This method is consistent with a draft European standard. Work is currently being undertaken on behalf of the Agency to develop a standard sampling methodology for biodegradable municipal waste, which will be available in Spring 2005.

3.6.1 The question is:

**“Should sampling from MBT be subject to a standard?”**

3.6.2 The suggested answer is:

“The Authority believes that all similar processes should be subject to a similar testing regime to allow meaningful comparisons between systems, facilitate regulation and ensure a level playing field for all parties. A standard European testing method allowing meaningful comparisons of different systems across the continent would be favourable so far as the parameters tested are considered necessary, suitable and not superfluous.”

### **3.7 Questions 2 and 3.**

3.7.1 The Agency intends to sample municipal wastes subjected to MBT processes. A number of different techniques are considered in the consultation documents.

3.7.2 The Agency has reviewed the available methods of testing biodegradability including a range of biological and non-biological techniques and favours the aerobic dynamic respiration index (DRI) in preference to the static respiration index (SRI) due to the poor reproducibility of the SRI. Cross checking by testing dry matter (DM), organic matter loss on ignition (LOI), Total Organic Carbon (TOC), and Total Nitrogen (TN) is also recommended. In the consultation document the Agency makes a strong case for the use of LOI as a reliable and reproducible method of measuring biodegradable loss and casts doubt on alternative methods (that were developed for applications outside the waste industry) but seeks to justify a wider range of testing elsewhere in the consultation document.

3.7.3 The Agency is asking:

**“Are the tests set out [in the consultation document] fit for the purposes described and the most appropriate?”**

and:

**“Is there a need to establish a correlation between DRI and SRI?”**

The recommended answers are:

“The Authority would favour the sole use of the test of loss on ignition (LOI) as a test of the reduction in the biodegradability of the waste. The Agency makes a strong case for the use of this as the sole method of testing in the justification for using this technique to measure biodegradability due to its reproducibility and the Authority does not believe that there is a cost benefit to testing a wider range of parameters.

and:

“There is no need to correlate between SRI and DRI as the former technique is not suitable as a measure of biodegradability in this situation for the reasons stated in the consultation document and should not be used.”

### **3.8 Question 4.**

3.8.1 The Agency is proposing to measure both the inputs and outputs from MBT plants to determine the performance of the process and is seeking a consensus on this point.

3.8.2 The proposed methods of testing are similar to those proposed in support of question 2 above with the exception that Total Nitrogen (TN) is not proposed.

3.8.3 The question being asked is:

**“Is the sampling and testing of inputs and outputs the best for measuring the performance of MBT in diverting BMW? Are there other options for measurement, which would be better?”**

3.8.4 The suggested answer to the question is:

“Testing input and output from the plant is the most appropriate method of determining the reduction in biodegradability achieved during the process. The inputs and outputs should be tested for the same parameters as to be used to test the MSW described in question 2. Namely that Loss On Ignition testing should be applied to samples.”

### **3.9 Question 5.**

3.9.1 Biological methods of testing are inherently unreliable and subject to poor reproducibility and error. Other methods of testing for particular components of the waste stream are also unreliable and subject to errors, particularly in samples that can contain as many different elements as MSW. The Agency is proposing a testing method based on changes in Loss on Ignition considered being the most reliable on which to base any estimation of biodegradable reduction?

3.9.2 This could be likened to using a “sledgehammer to crack a nut” but should not be dismissed on this basis. However the technique is inexpensive, fast, and reproducible and is easy to conduct.

3.9.3 The Agency’s question is:

**“Is testing based on Loss on Ignition (LOI) the most reliable on which to base any estimation of biodegradable reduction”**

3.9.4 The recommended answer is:

“The Authority would support testing based on loss on ignition as proposed in the consultation document.”

### **3.10 Question 6.**

3.10.1 The Agency is concerned that the technique of testing Loss on Ignition (LOI) should be a fair comparison between different MBT processes and different waste treatment processes.

3.10.2 It is difficult to see how the technique would not be fair as long as the tests are conducted in the same manner. The loss on ignition test is not subject to the problems faced by many of the other tests that could be used and therefore is fairer than these. In particular the loss on ignition test uses a dried sample that eliminates the variance caused by moisture content in the sample.

3.10.3 Use of LOI testing would allow comparisons between the reduction in biodegradability between different types of technology that are not possible using other methods.

3.10.4 The question states:

**“Is this fair, both between MBT processes and in comparison with other processes e.g. source separated composting and incineration?”**

3.10.5 The suggested answer is:

“The Authority considers the use of Loss on Ignition testing to be more fair than other techniques and that this would allow a meaningful comparison between different waste management technologies.”

### **3.11 Question 7.**

3.11.1 Municipal waste will always have a moisture content. This is highly variable with the waste composition and also seasonally. The first stage of all biological treatment processes including MBT is a drying phase where the moisture in the waste evaporates. This moisture content has a significant mass. The Agency is concerned that if waste was sent to landfill after the moisture has been lost but before significant biodegradation has occurred then the waste would show a loss of mass but would rehydrate in the landfill and have the same polluting potential as if it had not been treated at all.

3.11.2 The question asked is:

**“Should the method of monitoring allow for moisture as a proportion of the input as indicated and is this open to easy abuse? Or should only the dry weight reduction be counted?”**

3.11.3 The recommended answer is:

“The dry weight of the waste before and after processing should be measured to determine the reduction in mass. This will remove the variance due to fluctuations in moisture content and will measure the real biological mass reduction of the process.”

### **3.12 Questions 8 and 9.**

3.12.1 The Agency is requesting views on whether formal guidance should be issued in support of this work or whether reports should not be published.

3.12.2 The questions are:

**“Should we issue formal guidance about the work and the content of any report? Is there a case that the reports should not be published?”**

and:

**“Do you think this should take place before finalisation of the approach to calculating diversion, or can it wait until Spring/Summer 2005?”**

3.12.3 The suggested answer to these two questions is:

“The Authority would like draft guidance to be produced as early as possible to allow procurement decisions to be considered. Formal guidance should be published once a decision has been taken as to how diversion is to be calculated.

### **3.13 Questions 10.**

3.13.1 The Agency is proposing that plant operators should analyse the waste composition either quarterly or annually; DRI and BMP monthly or quarterly and bi-weekly or monthly DRI tests. For all DRI and BMP tests the associated physical and chemical tests would be required.

3.13.2 The question asked is:

**“Do you think that the frequency and number of tests proposed is reasonable and should a decreased frequency be explored further?”**

3.13.3 The proposed answer is:

“The Authority considers that the waste stream and process parameters should be tested quarterly. As stated in the answer to question 2 above, only the Loss on Ignition test is considered necessary to determine the reduction in biodegradable content achieved. The remaining tests are waste characterisation tests which may be of interest but should not be imposed on plant operators by this regime.”

### **3.14 Question 11.**

3.14.1 Finally, the Agency is requesting views on whether MBT outputs should be assigned a zero value for biodegradable content. In other words, if waste has been subjected to an MBT process, should it be assumed that the waste no longer contains any biodegradable content regardless of the efficiency of the process. In the consultation document the Agency presents an argument that this should not be the case. The EA view is that the fairest system, based on mass balance calculations, is to measure the actual reduction in biodegradability rather than to assume that all treatment technologies and operators produce a product that is fully biodegraded.

3.14.2 The Agency is concerned that if the blanket assumption that all systems fully treat the waste is permitted, then operators could avoid the full cost of treatment by introducing only rudimentary treatment and gaining the full benefit.

3.14.3 The Agency is asking:

**“Does this proposal seem fair, given the flexibility built into the mass balance system?”**

3.14.4 The recommended answer is

“The Authority considers that the fairest system is to measure actual reductions in biodegradability achieved by each plant. Such a system would take into account the potential differences between technologies and the polluting potential of the residue from MBT plants. This system would also create a level playing field for comparison between different waste treatment technologies.”

### **4.0 FINANCIAL ADVISER’S COMMENTS.**

4.1 The Financial Adviser has no comments to add to this report.

### **5.0 LEGAL ADVISER’S COMMENTS.**

5.1 The Legal Adviser has no comments to add to this report.

### **6.0 RECOMMENDATION**

6.1 It is recommended that the Authority approves the responses to the consultation papers set out in this report.