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Llywodraeth Cymru  
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## Consultation Document

### Draft Guidance in support of

The Recycling, Preparation for Re-use and Composting Targets (Definitions) (Wales) Order 2011

Regulations 4 and 5 of The Recycling, Preparation for Re-use and Composting Targets (Monitoring and Penalties) (Wales) Regulations 2011

Made under the Waste (Wales) Measure 2010

and

Consultation on issues affecting de-watering, apportionment of recycling rates from anaerobic digestion, composting and the recycling of incinerator bottom ash (IBA)

Date of issue: **16 January 2012**

Closing date: **16 April 2012**

## Overview

The Recycling, Preparation for Re-use and Composting Targets (Definitions) (Wales) Order 2011 defines recycling, preparation for re-use and composting for the purposes of the targets set in section 3 of the Waste (Wales) Measure 2010.

The Recycling, Preparation for Re-use and Composting Targets (Monitoring and Penalties) (Wales) Regulations 2011 detail how compliance with targets will be monitored and set out the penalties regime for non compliance.

The Guidance is prepared under section 7 of the Waste (Wales) Measure 2010 and supports the definitions contained in the Order and the monitoring regime set under regulations 4 and 5 of the Regulations.

The consultation seeks responses to the draft Guidance and to consideration of de-watering, apportionment of

recycling rates from anaerobic digestion, composting and the recycling of incinerator bottom ash (IBA).

## How to respond

Responses to this consultation should be submitted in writing to:

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Or via the Welsh Government's Waste Strategy website:

WasteStrategy@Wales.Gsi.Gov.Uk

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## Further information and related documents

This consultation includes:

Draft Guidance in support of The Recycling, Preparation for Re-use and Composting Targets (Definitions) (Wales) Order 2011 and Regulations 4 and 5 of The Recycling, Preparation for Re-use and Composting Targets (Monitoring and Penalties) (Wales) Regulations 2011.

A consultation on de-watering, apportionment of recycling rates from anaerobic digestion, composting and the recycling of incinerator bottom ash (IBA)

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## Consultation questions:

The questions contained within the second stage consultation on the: draft Guidance in support of The Recycling, Preparation for Re-use and Composting Targets (Definitions) (Wales) Order 2011 and Regulations 4 and 5 of The Recycling, Preparation for Re-use and Composting Targets (Monitoring and Penalties) (Wales) Regulations 2011 are:

**Question 1** - Do you consider that any further clarification is required regarding what constitutes local authority municipal waste? If so, please state what further clarification is necessary.

**Question 2** - Do you consider that any additions need to be made to the wastes that may count towards local authority recovery targets? If so, please state what those changes should be and in your opinion why they should be made.

**Question 3** - Do you consider that any changes need to be made to the description of the reporting requirements in support of local authority preparation for re-use, recycling

and composting targets? If so, please state what those changes should be and in your opinion why they should be made.

**Question 4** - Do you consider that Welsh Ministers should introduce legislation requiring all facilities that manage waste in Wales to report how much material they reject, the next destinations of materials sent from these facilities and other related information?

The questions contained in the consultation on de-watering, apportionment of recycling rates from anaerobic digestion, composting and the recycling of incinerator bottom ash (IBA) are:

**Question 5** - Do you agree with the proposed approach to de-watering? If not, please explain what you think the approach should be.

**Question 6** - Do you agree with the proposed approach to the apportionment of (i) AD digestates and composts, (ii) recycled incinerator bottom ash (IBA) and (iii) air pollution control residues (APCR) towards recovery targets? If not, please explain what you think the approach should be.

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## 1.0 Introduction

The Recycling, Preparation for Re-use and Composting Targets (Definitions) (Wales) Order 2011 and The Recycling, Preparation for Re-use and Composting Targets (Monitoring and Penalties) (Wales) Regulations 2011 were commenced on 30 March 2011. The two statutory instruments have been made under provisions in the Waste (Wales) Measure 2010 and support the statutory recovery targets set in the Measure.

The Waste (Wales) Measure 2010 sets statutory recovery targets in line with *Towards Zero Waste*, the overarching waste strategy document for Wales and Part 1 of the *Municipal Sector Plan*.

The purpose of this Guidance is to provide clarity in respect of the definitions of recycling, preparation for re-use and composting contained in the Order and the monitoring and reporting requirements contained in the Regulations.

Most of the areas covered in this Guidance were consulted upon during the consultation on drafts of The Recycling, Preparation for Re-use and Composting Targets (Definitions) (Wales) Order 2011 and The Recycling, Preparation for Re-use and Composting Targets (Monitoring and Penalties) (Wales) Regulations 2011 and associated Guidance, from 1 December 2010 to 26 January 2011.

The re-drafted Guidance takes account of comments received during the first stage of consultation. Some areas of the draft Guidance have not been previously consulted upon and views are sought on these in this second stage consultation.

Throughout the Guidance reference is made to recovery targets, reflecting the fact that recycling, preparation for re-use and composting (including anaerobic digestion) are recovery operations. For the purposes of the targets set in the Waste (Wales) Measure and this Guidance, recovery means **only** recycling, preparation for re-use and composting (including anaerobic digestion) – as set out in sections 3(2) and 3(5) of the Measure.

## 2.0 Targets

The targets set in section 3 (3) of the Waste (Wales) Measure 2010 and schedule 5 of The Local Government (Performance Indicators and Standards) Order 2010 implement the Welsh Government's commitment to promote a high recycling society. The targets have been set following extensive consultation through the *Future Directions* papers<sup>1</sup>, consultation on *Towards Zero Waste* and Part 1 of the *Municipal Sector Plan*.

Each target applies to individual local authorities in Wales. The targets will be monitored by means of annual Performance Indicators, which are derived from data provided by local authorities through the WasteDataFlow national waste database.

The targets are based on the net (i.e. less rejects) aggregated recycling, preparation for re-use and composting (including anaerobic digestion) tonnages divided by the total tonnage of local authority municipal waste collected:

$$\text{Overall recovery (\%)} = \frac{\text{Aggregated recycling, preparation for re-use and composting}}{\text{Total local authority municipal waste}} \times 100$$

The targets set in the Waste (Wales) Measure 2010 are minimum recovery (i.e. recycling, preparation for re-use and composting) targets.

	2012-13	2015-16	2019-20	2024-25
Recovery target %	At least 52	At least 58	At least 64	At least 70

The minimum recovery (i.e. recycling, preparation for re-use and composting) targets for each year from 2012-13 are:

2012-13 = 52%  
2013-14 = 52%  
2014-15 = 52%  
2015-16 = 58%  
2016-17 = 58%  
2017-18 = 58%  
2018-19 = 58%  
2019-20 = 64%  
2020-21 = 64%  
2021-22 = 64%  
2022-23 = 64%  
2023-24 = 64%  
2024-25 = 70%

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<sup>1</sup> The Future Directions papers were a series of three policy discussion papers published by the Welsh Government between October 2007 and April 2009.

## 3.0 Definitions

It is important to consider issues of definition in turn. In section 3.1 below there is clarification of what constitutes local authority municipal wastes. In 3.2 it is explained which of these wastes may be counted as recycled, prepared for re-use or composted (including anaerobically digested).

### 3.1 Wastes to be included as local authority municipal wastes

Under section 3(8) of the Waste (Wales) Measure local authority municipal waste includes wastes collected under section 45 and subsections (1)(b) and (3) of section 51 of the Environmental Protection Act 1990. It also includes such other wastes as are specified by order of the Welsh Ministers.

Only waste collected by local authorities or their agents under the relevant sections of the Environmental Protection Act 1990 (referred to above) are considered local authority municipal wastes and included under the statutory recovery targets regime.

Some specific waste types are considered in turn.

#### 3.1.1 Home composting

Home composted material is not collected by local authorities under sections 45 or 51 of the Environmental Protection Act 1990 and is therefore not local authority municipal waste and thus does not contribute towards the statutory recovery targets.

#### 3.1.2 Soil and rubble

For the purposes of the statutory recovery targets, soil and rubble delivered by householders resident in the local authority's area to facilities (civic amenity sites and household waste recycling centres) provided under section 51 of the Environmental Protection Act 1990 are considered to be local authority municipal wastes. Small amounts of soil and rubble delivered by traders will also count as local authority municipal wastes.

**The quantities of soil and rubble reported through WasteDataFlow<sup>2</sup> will be monitored and kept under review - and if there is evidence that the inclusion of recycled soil and rubble towards recovery targets is skewing rates such that the quantity of packaging materials and other priority materials<sup>3</sup> that need to be recycled is reduced, the Welsh Ministers may seek to amend the Waste (Wales) Measure to exclude soil and rubble from counting towards recycling targets in future years.**

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<sup>2</sup> WasteDataFlow is the national waste database which is used for the monitoring of local authority performances against the Landfill Allowances Scheme and performance indicators – including those that monitor performance against the statutory recovery targets.

<sup>3</sup> Priority materials are identified in Towards Zero Waste. For household waste they are: food waste, plastics and paper.

### 3.1.3 Abandoned vehicles

Abandoned vehicles are not local authority municipal wastes and their recycling does **not** count towards statutory recycling targets. Data concerning the management of abandoned vehicles should continue to be entered in WasteDataFlow.

### 3.1.4 Beach cleansing wastes

Beach cleansing wastes are local authority municipal wastes by virtue of The Controlled Waste Regulations 1992, which include wastes collected under section 89(1)(c) of the Environmental Protection Act 1990 as being household wastes. These wastes include those from the relevant land of a principal litter authority. As a result these wastes are covered by section 45 of the Environmental Protection Act 1990 and are therefore local authority municipal wastes for the purposes of the targets set under the Waste (Wales) Measure 2010. For clarity, relevant land in this context includes areas of beaches that are under direct local authority control, to which the public are permitted access and which are above the place to which the tide flows at mean high water springs.

### 3.1.5 Plasterboard

Plasterboard is capable of being included towards the targets where it is collected at local authority collection facilities provided under section 51 or collected under section 45 of the Environmental Protection Act 1990. Plasterboard should be separately collected and recycled and must not be sent to landfill with biodegradable wastes.<sup>4</sup>

### 3.1.6 Incinerator Bottom Ash (IBA)

For clarity, IBA [and other residues from energy from waste processes, e.g. char from gasification, but not including air pollution control residues (APCR), see below] that is produced following combustion of other local authority municipal wastes (i.e. wastes collected under sections 45 and 51 of the Environmental Protection Act 1990) is considered to be local authority municipal waste.

### 3.1.7 Air Pollution Control Residues (APCR)

APCR, commonly referred to as 'fly ash' is a by-product of the combustion of wastes and the introduction of materials to neutralise or trap gaseous and particulate emissions from combustion. That portion of APCR which is produced directly from the combustion of other local authority municipal wastes (i.e. wastes collected under sections 45 and 51 of the Environmental Protection Act 1990) is considered to be local authority municipal waste.

**It is important that in any calculation of the portion of APCR that is local authority municipal waste that all materials added to combustion products to neutralise them are excluded. These materials are added to treat the products**

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<sup>4</sup> Guidance on plasterboard produced by EA: [http://www.environment-agency.gov.uk/static/documents/Business/PS\\_007\\_Landfilling\\_gypsum\\_rev\\_Jan\\_2011.pdf](http://www.environment-agency.gov.uk/static/documents/Business/PS_007_Landfilling_gypsum_rev_Jan_2011.pdf).

**of the combustion of local authority municipal wastes and are not themselves local authority municipal wastes. Only the dry weight of APCR that is derived from the products of combustion of local authority municipal wastes should be included in WasteDataFlow.**

### **3.1.8 Tyres**

Tyres are not local authority municipal waste if they are collected as constituents of abandoned vehicles. Where tyres are collected under sections 45 or 51 of the Environmental Protection Act 1990 they will count towards local authority municipal waste. It is expected that only very small quantities of tyres will be collected through these routes. Where a local authority clears fly-tipped waste in its capacity as a Waste Collection Authority or principal litter authority, then any tyres collected will be considered to be local authority municipal wastes. Neither whole nor shredded tyres may be landfilled as this activity is banned under the EU Landfill Directive.<sup>5</sup>

### **3.1.9 Clinical wastes**

Any waste produced in a household following treatment by a visiting healthcare professional is considered to be the responsibility of the healthcare professional. Where such healthcare wastes are hazardous (e.g. where they contain infectious bodily fluids) then the healthcare professional has the responsibility of arranging collection and disposal.

Hygiene wastes (sanitary towels, nappies and incontinence pads) may be disposed of with domestic wastes provided that they are not hazardous.

Any clinical wastes collected by or on behalf of a local authority under section 45 of the Environmental Protection Act 1990 will be local authority municipal waste.

### **3.1.10 Road sweepings and gully wastes**

Road and street sweepings collected under section 89(2) of the Environmental Protection Act 1990 are included as being household waste in the Controlled Waste Regulations 1992. As a result, these wastes are covered by section 45 of the Environmental Protection Act 1990 and are therefore local authority municipal wastes.

Gully wastes (wastes washed from drainage channels on roads and car parks into underground pots) contain a range of materials including chippings, leaves and litter. Where these are collected under section 89(2) of the Environmental Protection Act 1990 they are household wastes and are local authority municipal wastes.

### **3.1.11 Asbestos**

Small quantities of asbestos may be deposited at CA sites by householders under section 51 of the Environmental Protection Act 1990. Local authorities may also arrange for collection of asbestos from households under section 45 of the

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<sup>5</sup> Council Directive 99/31/EC.



Environmental Protection Act 1990. In both cases the wastes will be local authority municipal wastes.

***Question 1 – Do you consider that any further clarification is required regarding what constitutes local authority municipal waste? If so, please state what further clarification is necessary.***

## **3.2 Recycling, preparation for re-use and composting**

Recycling, preparation for re-use and composting of all materials confirmed to be local authority municipal wastes in 3.1 will count towards local authority recycling, preparation for re-use and composting targets.

### **3.2.1 The definition of recycling and the use of End of Waste (EoW) criteria**

For waste to be considered as recycled it must satisfy the criteria set out in Article 3 of the Recycling, Preparation for Re-use and Composting Targets (Definitions) (Wales) Order 2011 - it must have undergone a relevant recovery operation so that it has been reprocessed into a product, material or substance, whether for its original or other purpose. In terms of such waste counting towards targets, careful attention should be paid to section 4.3 of this Guidance.

For many waste materials it will be necessary to establish the point at which a material ceases to be a 'waste'. Often, this will be by reference to its compliance with specified end of waste (EoW) criteria; this is explained in Article 6 of the revised Waste Framework Directive (rWFD).<sup>6</sup>

Article 6 of the rWFD defines the concept of EoW status, which may be summarised as below. To cease to be waste a substance or object must meet criteria developed in accordance with the following conditions:

- It must be commonly used for specific purposes.
- There must be an existing market or demand for it.
- It must meet any applicable technical requirements for its specific purpose, or existing legislation and standards.
- Its use must not lead to overall adverse environmental or human health impact.

Material specific EoW criteria may be set at the European level or, if not, at Member State level.

The European Commission has introduced a Regulation setting EoW criteria for scrap metals (ferrous and aluminium), and is proposing similar legislation for copper, paper, glass and plastics. Legislation covering bio-wastes is in preparation.

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<sup>6</sup> Council Directive 2008/98/EC.

In the UK the Environment Agency (EA) and the Waste and Resources Action Programme (WRAP) are working together to produce Quality Protocols (QPs). These are intended to help identify when something becomes a product and ceases to be a waste. The QPs currently available include the following materials:

Waste cooking oil and rendered animal fat (bio-diesel).

Compost and anaerobic digestate (AD) respectively.

Flat glass.

Production of aggregates from inert waste.

Non-packaging plastic waste.

Tyre-derived rubber materials.

Production and use of gypsum from waste plasterboard.

Processed fuel oil from waste lubricating oil.

Pulverised fuel ash and furnace bottom ash.

The development of QPs is also being considered for other materials. One example is incinerator bottom ash (IBA) where a technical advisory group (TAG) is collating information to demonstrate whether a QP can be developed.

It needs to be understood that where there is not a QP for a specific material that does not necessarily prevent the material from achieving EoW status.

Materials that are rejected during post collection sorting or that are rejected at a re-processor because they are contaminants must not be counted towards recovery targets (unless the contaminants themselves are subsequently recovered). All materials rejected between collection and final re-processing must be recorded as far as practicable and will be excluded from contributing towards the calculation of recovery rates via the WasteDataFlow system. This does not include materials rejected during re-processing as a consequence of the process itself (e.g. short fibres and clay particles rejected during paper re-processing).

Water that is lost during processes that treat 'dry recyclable' wastes (e.g. paper, glass, metals and plastics) that have become wet due to rain or other sources of water, is not considered recycled and may not count towards recovery targets. This contrasts with the position in relation to the composting or anaerobic digestion of food wastes or green wastes, where the weight of the input materials (less contamination) is counted towards recovery targets. Water is an inherent component of food and green wastes and is counted towards recovery targets for these materials. Water is not an inherent component of 'dry recyclables'.

Grit from inert wastes<sup>7</sup> may only be considered recycled if it ceases to be waste (meets EoW criteria via Quality Protocol compliance) and if it is used or intended for use in a way that does not involve backfilling. If it meets these criteria then it may count towards recovery targets.

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<sup>7</sup> Defined in Appendix C of the Quality Protocol on Aggregates.

Any product, material or substance that is to be used for backfilling<sup>8</sup> (including treated bio-wastes) must not be counted as recovered for the targets set under the Waste (Wales) Measure 2010. No material that is used or intended for use as daily cover on a landfill may be considered as recovered.

Where IBA derived from the combustion of local authority municipal wastes is recycled such that it ceases to be a waste through compliance with EoW criteria (via a Quality Protocol), its dry weight may count towards local authority recovery targets.

Where APCR derived from the combustion of local authority municipal wastes is recycled such that it ceases to be a waste through compliance with EoW criteria (via a relevant Quality Protocol) the dry weight of that portion of APCR derived from the combustion of local authority collected municipal waste may count towards local authority targets. This will be the dust fraction, and it is likely to be a small proportion of the overall weight of APCR residue. Any weight of APCR due to material introduced to react with the by-products of combustion may **not** count towards local authority recycling targets.

***Question 2 - Do you consider that any additions need to be made to the wastes that may count towards local authority recovery targets? If so, please state what those changes should be and in your opinion why they should be made.***

### **3.2.2 The definition of preparation for re-use**

After waste prevention, preparation for re-use is the next best option in the waste hierarchy and it can make significant contributions towards reducing carbon and ecological footprints. Preparing items for re-use can also create employment and training opportunities and wider sustainable development benefits.

For waste to be considered as prepared for re-use, it must satisfy the criteria set out in Article 4 of the Recycling, Preparation for Re-use and Composting Targets (Definitions) (Wales) Order 2011. The three permitted preparation for re-use recovery operations are checking, cleaning and repairing.

It is particularly important that thorough checking is carried out on all items that are being prepared for re-use to ensure that they are safe, meet required standards and are fully legally compliant before re-use. This includes the checking, testing and certification of electrical items and checking that upholstered furniture and other items meet all fire safety requirements.

Repair of items includes the replacement of worn, damaged or malfunctioning component or parts. This includes all carpentry operations required to repair wooden items (including furniture) all metal working operations on relevant items, the replacement of glass in mirrors and similar, re-upholstering of furniture – and all

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<sup>8</sup> Backfilling means a recovery operation where suitable waste is used for reclamation purposes in excavated areas or for engineering purposes in landscaping and where the waste is a substitute for non-waste materials.

other operations that are required such that an item is fit for use for its originally intended purpose.

Once items are checked, cleaned and repaired such that they are ready for re-use, their weights may be entered into WasteDataFlow so that they count towards the targets.

### **3.2.3 The definition of composting and anaerobic digestion (AD)**

For waste to be considered as composted, it must satisfy the criteria set out in Article 4 of the Recycling, Preparation for Re-use and Composting Targets (Definitions) (Wales) Order 2011. Article 5(1)(a) of the Order confirms that, for the purposes of section 3 of the Waste (Wales) Measure, 'composting' includes both composting and anaerobic digestion processes.

Biodegradable wastes (e.g. food wastes and green garden wastes) may be considered composted if they undergo a recovery operation which produces a product, material or substance that is capable of use as a soil conditioner, fertiliser or growing medium.

Currently in Wales there are Quality Protocols for composting and anaerobic digestion of source segregated bio-wastes. In order for bio-wastes to cease to be waste and to be considered recycled they must comply with the relevant Quality Protocols. For composts this means compliance with the Quality Protocol (including Publicly Available Standard 100) and for anaerobic digestate it means compliance with the Quality Protocol (including Publicly Available Standard 110). The Quality Protocols may be replaced by EC Regulations, which would then set the new EoW criteria. *Please see Part A of 'Consultation on apportionment of recycling rates from anaerobic digestion, composting and the recycling of incinerator bottom ash (IBA)'.*

Where composts and digestates comply with the Quality Protocols or revised EoW criteria set out above, the amount considered recovered for the purposes of the targets set under the Waste (Wales) Measure 2010 will be the weight of the input to a composting or anaerobic digestion facility minus rejects (including plastics, metals, glass, oversized items and where appropriate non-degraded corn starch bags). *This is subject to clarification on de-watering - please see Part A of 'Consultation on apportionment of recycling rates from anaerobic digestion, composting and the recycling of incinerator bottom ash (IBA)'.*

## 4.0 Monitoring and reporting

The targets set under the Waste (Wales) Measure 2010 are intended to promote higher levels of recycling and to realise concomitant benefits. This is monitored through accurate and timely reporting of data, which is critical to the success of the legislation that sets targets and the strategies behind that legislation that promote sustainable resource management. Monitoring and reporting against the recovery targets will be afforded a very high priority and all involved must clearly understand and deliver against their respective roles and duties.

### 4.1 WasteDataFlow and reporting requirements

Regulation 5 of The Recycling, Preparation for Re-use and Composting Targets (Monitoring and Penalties) (Wales) Regulations 2011 obliges local authorities to use the WasteDataFlow national waste database as the means of reporting waste flows in a way that enables recovery rates to be calculated.

The reporting periods are each of three months and data returns must be submitted within one month of the end of the three month period. The one month for submitting data returns will be kept under review from April 2012.

### 4.2 End destinations and reject rates

The statutory recovery targets set under the Waste (Wales) Measure 2010 must be accurately reported and only materials that are actually recycled, prepared for re-use or composted (including anaerobically digested) will be included in the calculation of recovery rates. The accuracy of this calculation depends upon accurate reporting of reject rates, including those from sorting facilities and re-processors – whether these are involved through long-term contracts or via the ‘spot market’. For this reason it is important that local authorities follow, as far as is practicable, the flows of materials after they have been collected.

It is important that end destinations are identified as far as practicable. The end destinations of materials will be:

- The materials re-processor where materials are recycled, prepared for re-use or composted (including anaerobically digested).
- The disposal facility where materials rejected during sorting of recyclables, preparation of items for re-use or composting (including anaerobic digestion) are disposed of.
- The first country to which material intended for recovery operations is exported outside the United Kingdom (UK).

Material flows should, wherever practicable, be monitored from the point of collection to the appropriate end destination – to include identification of intermediate sorting facilities. **Question 100 of WasteDataFlow has been developed to assist with reporting of waste flows and all local authorities in Wales must use Question 100 from 1st April 2012.**

There are occasions where collected materials may pass through several stages between collection and re-processing and during which wastes from different local authorities may become mixed with non local authority wastes. **These materials may also be sent to more than one re-processor. It is important that local authorities report intermediate sorting facilities, reject rates and end destinations.**

It is important that wherever local authorities use contractors for collection and sorting of waste materials that their contracts require the submission to the local authorities of timely and accurate data. This approach would be assisted by requiring that all tenderers for contracts agree to use the approaches contained in Publicly Available Standard 402 for reporting back to local authorities. Once materials pass beyond the first stage of sorting it should be the responsibility of the first stage (primary) facility to request information about reject rates and next destinations from the secondary facilities. The primary facility should then pass on the information to the local authority/ies. Similarly, secondary facilities should try and obtain information from tertiary facilities and pass this back to the primary facility – and so on. It is appreciated that the accurate monitoring and reporting of rejects and next destinations will become more difficult as materials go through more stages of sorting and treatment prior to re-processing. The approaches outlined in section 4.3 are intended to assist in making reporting easier. For small weights of material that have passed through several different facilities the advantages of tracking the material flows may be outweighed by the time and costs of collating and returning data. Where local authorities consider this to be the case they should consult the Monitoring Authority to seek agreement on the definition of the effective end destination. The Monitoring Authority shall advise on any de minimis approaches to be taken.

The Welsh Local Government Association (WLGGA) has been working with the Welsh Government to prepare advice to local authorities on how they might better report end destinations of materials. Eunomia Research and Consulting was contracted to prepare a discussion paper and local authorities should use this to help them prepare to meet their obligations.<sup>9</sup>

### **4.3 Allocation of rejects and sampling at Materials Recovery Facilities (MRFs) and other waste facilities**

The simplest approach to allocating rejects is a pro rata approach. A waste facility will determine the amount of material that is provided to it from multiple sources, whether the facility is bulking materials or sorting them prior to bulking. The percentage of inputs to a facility from a specified local authority is therefore easily reported. The outputs from a sorting facility will be in three basic categories:

- Material rejected for disposal.
- Material that has been sorted to a standard whereby it will be accepted by a re-processor.

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<sup>9</sup> Eunomia Consulting Ltd: Local Authority Reporting of End Destinations in Wales – A Discussion Paper.

- Material that has been sorted but which requires further sorting before it will be accepted by a re-processor.

The following example is provided to explain how the calculations need to be made.

### **Example 1**

If 10% of the material received at a waste sorting facility is rejected for disposal, then 10% of all the inputs to that facility from a specified local authority will be considered as rejected for disposal. Thus, if a local authority sends 1000 tonnes to a sorting facility that has an overall material reject rate of 10%, then 100 tonnes will be entered into WasteDataFlow as being rejected.

Material of sufficient quality that it will be accepted by a re-processor will contain some non target materials that will be rejected by the re-processor. Unless these non-target materials are recycled as a consequence of arrangements made by the re-processor they will be rejected for disposal. They will similarly need to be counted as rejected in WasteDataFlow.

If 70% of the input material to the MRF is sent to a re-processor that then rejects 10% of the material received, then 7% of the input from a specified local authority will be material rejected for disposal at the re-processor. Thus, if a local authority sends 1000 tonnes to a sorting facility, then 70 tonnes will be entered into WasteDataFlow as being rejected at the re-processor.

Material which is not of sufficient quality to be accepted by a re-processor is sent for subsequent (secondary, tertiary, etc) sorting until it is of an acceptable quality to be received by a re-processor.

If 20% of the input material to the MRF is sent to secondary sorting and thence to re-processors and disposal resulting in half being recycled and half disposed of, then of the 1000 tonne input from the specified local authority 100 tonnes will be rejected for disposal and will be entered into WasteDataFlow as rejected.

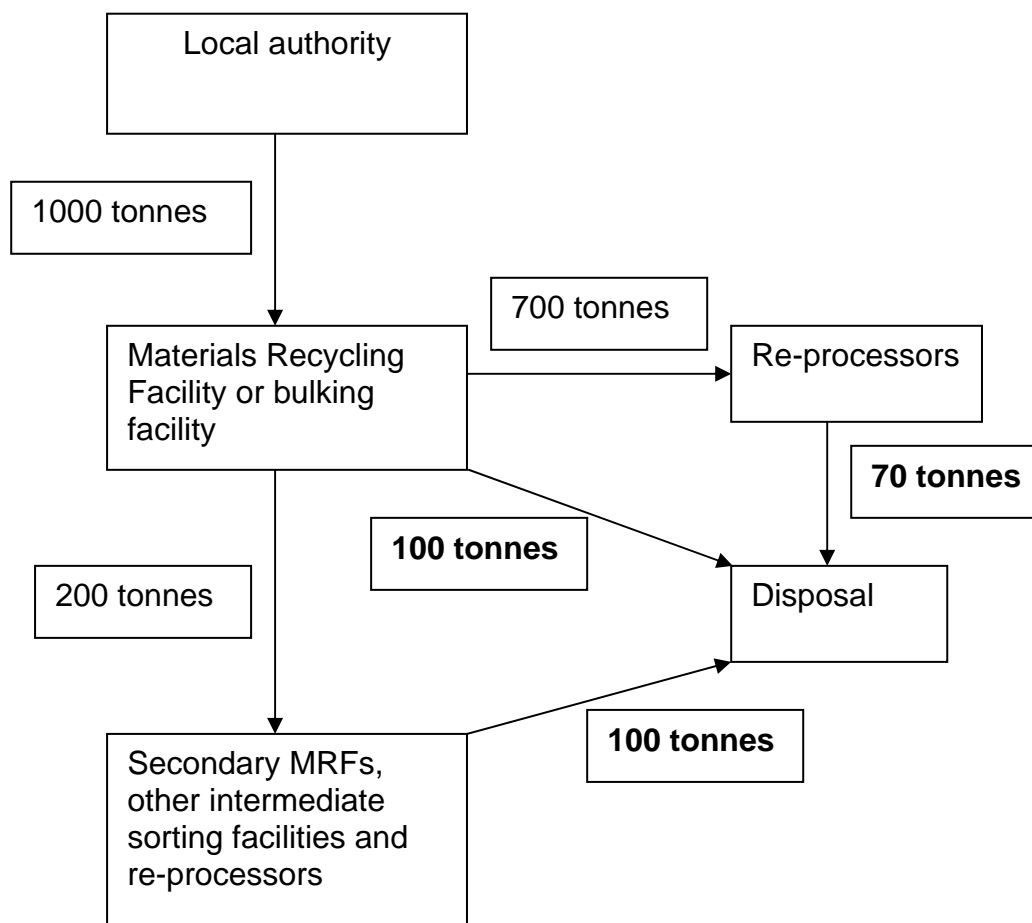
The net effect of the rejection of material through the three distinct categories outlined is that a local authority sending 1000 tonnes to the initial sorting facility should enter into WasteDataFlow that:

**270 tonnes** have been rejected for disposal; and

**730 tonnes** have been recycled.

Figure 1 illustrates the three main routes from which rejected materials are produced and which should be reported via WasteDataFlow, using Example 1 above.

**Figure 1 – The loss of materials due to rejection and the amounts to be reported as rejects via WasteDataFlow (in bold)**



The same approach illustrated in Example 1 should apply to all materials, MRFs, bulking stations and re-processors, irrespective of how material is collected. All local authorities must take all reasonable and practicable steps to report accurately all materials that are rejected and that are consequently not recycled, consistent with the constraints outlined in section 4.2.

Local authorities will have different levels of contamination in the materials they collect, depending upon how the material is collected. They will be variously advantaged and disadvantaged by a system of reporting based on apportionment. It is something that all local authorities should consider when deciding on the selection of sorting facilities for their materials.

An alternative to apportionment is sampling, where instead of pro rata reject assessments based on inputs, the inputs themselves are sampled and estimates of probable rejected material are determined based on the assessed recyclability of component materials. This approach can result in more accurate data for each individual authority, however it can also be more onerous. Any approach based on sampling of inputs of sorting materials should only be undertaken following consultation with the Monitoring Authority (currently the Environment Agency), which



needs to be reassured that the sampling is representative of inputs, that the sampling frequency is appropriate and that the robustness of the sampling protocols and practices is such that accurate data will be provided for entry into WasteDataFlow.

#### **4.4 The timing of the entry of recovery (recycling, preparation for re-use and composting) data into WasteDataFlow**

The calculation of local authority recycling, preparation for re-use and composting rates will be based on data provided by local authorities to WasteDataFlow (WDF). The overall performance against targets will be calculated by considering:

Total Recovery/Total Local Authority Municipal Waste x 100, as in paragraph 2 of this Guidance.

Broadly, WDF holds two types of data: arisings data and destination data. The current numerator (Total Recovery) is a sum of arising tonnages (entered into Q10,11,12,16,17,18,33 and 34 of WDF), minus any rejection of recyclables entered throughout WDF, plus any residual recycling. In light of the developments to WDF (Question 100), and the new statutory recycling targets to be introduced in 2012-13, it is proposed to change to the way this numerator is calculated.

Total Recovery will now be a sum of all the relevant material types entered into WDF (excluding abandoned vehicles) as having been sent to destinations, i.e. the tonnage entered against Final Destination into Question 100 (or Questions 19, 19a and 35 of the old system).

This new method simplifies the equation significantly and is a more accurate representation of what is actually being recycled within that period and the way that waste is managed overall by a local authority.

***Question 3 - Do you consider that any changes need to be made to the description of the reporting requirements in support of local authority preparation for re-use, recycling and composting targets? If so, please state what those changes should be and in your opinion why they should be made.***

***Question 4 - Do you consider that Welsh Ministers should consult on the possibility of introducing legislation to require all facilities managing waste in Wales to report how much material they reject, the next destinations of materials sent from these facilities and other related information?***

## **Consultation on de-watering, apportionment of recycling rates from anaerobic digestion, composting and the recycling of incinerator bottom ash (IBA)**

It is proposed to introduce legislation that will define the position in relation to the de-watering of digestate from anaerobic digestion (AD) facilities and the apportionment of recovery rates from AD, composting and the recycling of incinerator bottom ash (IBA) and air pollution control residues (APCR) for facilities that take feedstock from multiple (i.e. local authority and non-local authority) sources.

### **(A) De-watering of anaerobic digestate**

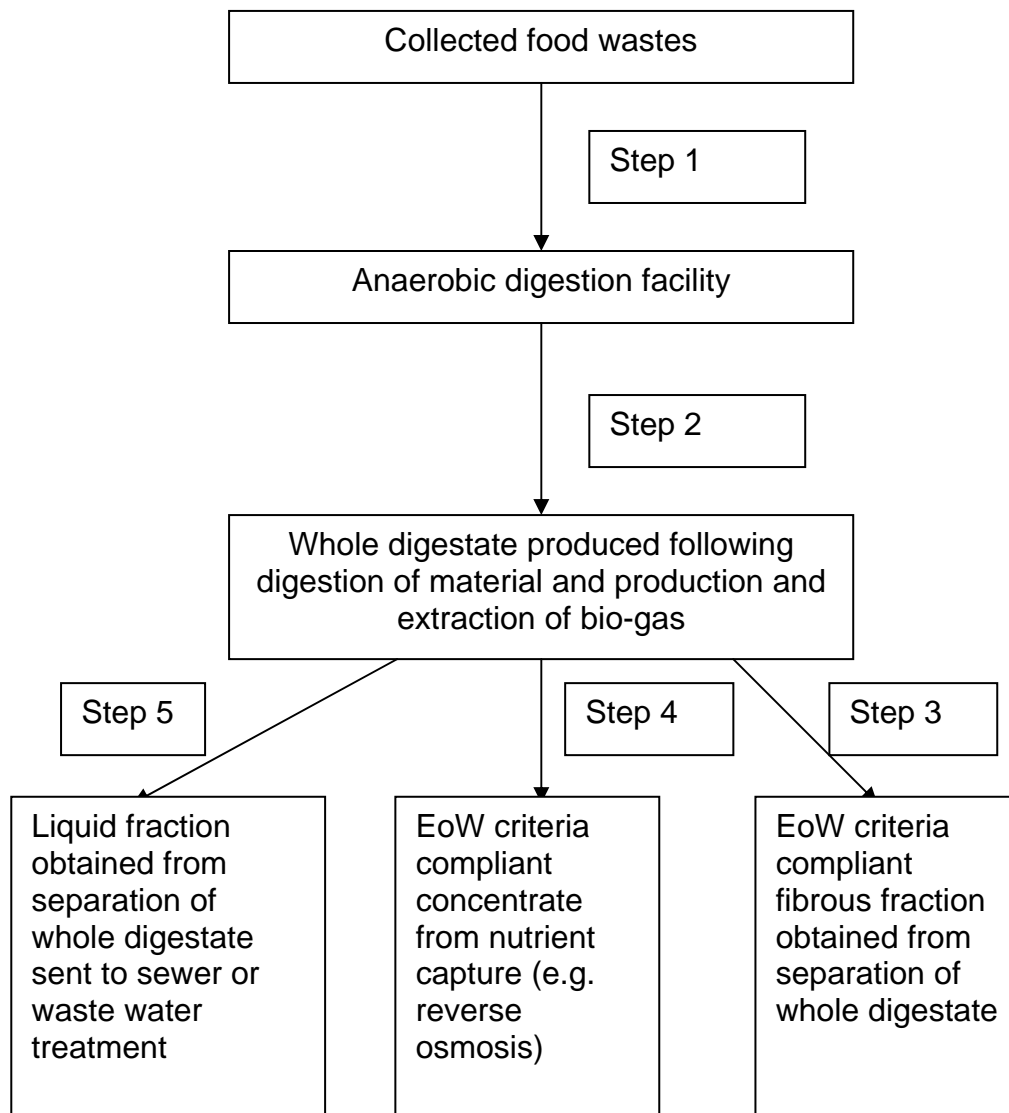
One purpose of the AD of local authority collected food wastes is to return organic matter and nutrients to the soil (or to plants via non soil based growing, such as hydroponics and algal culture). Consequently, it is important that any contribution towards composting rates reflects the actual recycling of plant nutrients as well as carbon.

Where AD digestate outputs comply with the AD Quality Protocol (QP) and are destined to be applied to land, all the inputs (less rejects) may be considered as composted. Where some of the digestate is removed to facilitate easier transportation of outputs (including the de-watering of digestate) then additional monitoring and reporting will be required to demonstrate that de-watering is not preventing the recovery of nutrients.

The metric chosen to monitor the recovery of plant nutrients is the amount of total nitrogen and total solids that are retained in separated solid digestate or post treatment concentrate that is applied to land for agricultural benefit (or used in hydroponics or algal culture).

The contribution of AD towards a local authority's recovery targets (where de-watering takes place) may be illustrated as in Figure A below.

**Figure A – The calculation of the composting rate of an AD facility that employs de-watering of digestate**



The different steps identified in the illustration contribute towards the composting rate of a local authority. The lesser of either the proportion of Total Nitrogen Recycled (TNR) or the proportion of Total Solids Recycled (TSR) will be used to calculate the composting rate, as determined by the formula below:

A = The input of material during step 1 minus rejects (plastic bags, cutlery, bones and other inert materials)

$B_N$  = Amount of Total nitrogen in whole digestate following step 2

$C_N$  = Amount of Total nitrogen in the solid digestate following step 3

$D_N$  = Amount of Total nitrogen in the concentrate following step 4

$B_S$  = Amount of Total Solids in whole digestate following step 2  
 $C_S$  = Amount of Total Solids in the solid digestate following step 3  
 $D_S$  = Amount of Total Solids in the concentrate following step 4

The proportion of Total Nitrogen in EoW criteria compliant products, materials or substances recycled [TNR] (as a percentage of that in the whole digestate) =  $([C_N + D_N] / B_N) \times 100$ .

The proportion of Total Solids in EoW criteria compliant products material or substances recycled [TSR] (as a percentage of that in the whole digestate) =  $([C_S + D_S] / B_S) \times 100$ .

The amount of food waste that may count towards the recovery targets = the lesser of either  $A \times \text{TNR}$ , or  $A \times \text{TSR}$ .

It should be the contractual responsibility of AD facility operators to calculate the TNR and TSR and report these to local authorities. It is for the local authorities to calculate  $A \times$  (the lesser of TNR and TSR) and to enter the data in WasteDataFlow.

The calculations above can only be made based upon robust sampling and measurement. The weights, flow rates, volumes and concentrations of each of the following will need to be sampled, measured and reported to the local authority:

- Collected food waste inputs.
- Whole digestate.
- EoW criteria compliant fibrous fraction obtained from separation of whole digestate.
- EoW criteria compliant concentrate from nutrient capture (e.g. reverse osmosis).

The frequency of sampling and measuring should be at least quarterly and local authorities must retain all the above data for inspection by the Monitoring Authority to assist with its validation of data submitted via WasteDataFlow.

### **Example A**

The effect of the potential TNR and TSR values on the amount of food waste that may count towards recovery targets, taking account of de-watering, is illustrated below.

Assuming that a local authority sends 200 tonnes of food waste to an AD facility which de-waters the digestate produced and monitors TNR and TSR as above, then if TNR = 85% and TSR = 80% the amount of input material that may contribute towards recovery targets is:

$200 \times 80\% \text{ (TSR)} = 160 \text{ tonnes.}$

This applies to a facility in which the outputs from Steps 3 and 4 above are QP compliant and are applied to land.

**Question 5 – Do you agree with the proposed approach to de-watering? If not, please explain what you think the approach should be.**

**(B) Apportionment in relation to AD digestate**

It is appreciated that AD and composting facilities will become available at different times over coming years and that accreditation of facilities once they are commissioned will take time. Further, some of the bidders to run AD facilities have indicated that the market for AD digestate to be used as a soil conditioner is immature. They have consequently requested that for a limited period of time that the outputs used as soil conditioner or fertiliser be effectively considered to be derived from that portion of the inputs to the AD plant that have been provided by Welsh local authorities. This 'apportionment' will ensure that Welsh local authorities may count all their inputs (less rejects) to AD facilities towards the statutory recovery targets, as proposed below.

- As of 1 April 2012 existing composting and AD facilities that are receiving municipal bio-wastes from local authorities must either be producing composts or digestates that are Quality Protocol compliant or be in the process of applying for appropriate accreditation. These facilities must be producing Quality Protocol outputs by 1 April 2014, if the local authority inputs are to count towards recovery targets.
- After 1 April 2012 any composting or AD facilities that start to receive municipal bio-wastes from local authorities must achieve appropriate accreditation within two years of being commissioned, if the local authority inputs are to count towards recovery targets.
- By 1 April 2019 all facilities receiving municipal bio-wastes from local authorities must be appropriately accredited and be producing Quality Protocol compliant composts or digestates, if the local authority inputs are to count towards recovery targets.

**Any facilities that are being used to compost or anaerobically digest municipal organic wastes and which are not accredited or in the process of formally seeking accreditation *may not* contribute towards recovery targets from April 2012.**

AD facilities may produce PAS 110 compliant digestate that is destined to be applied to land such that it meets the QP/End of Waste (EoW) criteria and, depending on markets for digestate, they may send some of their digestate for non land application uses. Where this is the case a proportionate consideration of inputs – based on total solids - from Welsh local authorities and outputs from AD facilities is considered appropriate. Where relevant, PAS 100 composts produced at composting facilities may be treated in the same way. **Thus, where Welsh local authorities provide 50% of the inputs to an AD process and at least 50% of the outputs are destined to be applied to land in accordance with the QP, then the Welsh local authorities may count all their inputs (less reject materials) towards the recovery targets.**

From April 1 2019 a pro rata application will apply. If 50% of a facility's overall digestate output is QP compliant **and** destined to be applied to land, then 50% of the local authority's inputs (less rejects) will apply to recovery targets.

### **Example B**

Where the AD (or composting) facilities concerned are either accredited or formally seeking accreditation as described previously:

- (1)** If a Welsh local authority provides 200 tonnes (after rejects) to an AD plant of 1000 tonnes capacity and 800 tonnes of digestate are produced, all of which are applied to land, then the recovery rate to be counted towards the local authority's performance is 100% (equivalent to 200 tonnes).
- (2)** If a Welsh local authority provides 200 tonnes (after rejects) to an AD plant of 1000 tonnes capacity and 800 tonnes of digestate are produced, of which 200 tonnes are applied to land, then the recovery rate to be counted towards the local authority's performance is 100% (equivalent to 200 tonnes) until April 2019.
- (3)** If a Welsh local authority provides 200 tonnes (after rejects) to an AD plant of 1000 tonnes capacity and 800 tonnes of digestate are produced, of which 200 tonnes are applied to land, then the recovery rate to be counted towards the local authority's performance is 25% (equivalent to 50 tonnes) after April 2019.

### **(C) Apportionment in relation to Incinerator Bottom Ash (IBA) and Air Pollution Control Residues (APCR)**

Where local authority municipal waste is incinerated the contribution to local authority targets of any IBA that is subsequently successfully recycled is determined by the overall recycling rate of the facility.

The same approach may be taken to APCR, subject to the conditions detailed in paragraph 3.1.7. of the draft Guidance in support of The Recycling, Preparation for Re-use and Composting Targets (Definitions) (Wales) Order 2011 and Regulations 4 and 5 of The Recycling, Preparation for Re-use and Composting Targets (Monitoring and Penalties) (Wales) Regulations 2011.

### **Example C**

Assuming that 100,000 tonnes of local authority municipal waste are sent to an incinerator, with Authority A providing 50,000 tonnes, Authority B providing 30,000 tonnes and Authority C providing 20,000 tonnes. If the incinerator reduces 100,000 of input to 20,000 tonnes of IBA and recycles all of it in accordance with a Quality Protocol for IBA, then Authority A may count 10,000 tonnes towards its recycling targets, Authority B 6,000 tonnes and Authority C 4,000 tonnes.

If 25% of the IBA produced is recycled in accordance with a Quality Protocol for IBA then Authority A may count 2,500 tonnes towards its recycling targets, Authority B 1,500 tonnes and Authority C 1,000 tonnes.

If the local authorities above provide the same weights of local authority municipal waste to an incinerator that also receives 100,000 tonnes of input of non local authority municipal wastes, then it is the recycling rate of the facility overall that determines the recycling rates for the local authorities.

Thus, if the facility as a whole produces 40,000 tonnes of IBA and recycles 25% of it, then Authority A may count 2,500 tonnes towards its recycling targets, Authority B 1,500 tonnes and Authority C 1,000 tonnes.

It is proposed that this approach will apply to IBA and APCR from both existing and new energy from waste facilities.

***Question 6 – Do you agree with the proposed approach to the apportionment of (i) AD digestates and composts, (ii) recycled incinerator bottom ash (IBA) and (iii) air pollution control residues (APCR) towards recovery targets? If not, please explain what you think the approach should be.***

Following consideration of the consultation responses the Welsh Government will prepare and consult upon a Statutory Instrument that will provide legal clarity on these issues.