

Analysis of Potential Re-alignment and Harmonisation of Particular Waste Definitions in Europe and the Implications for UK Waste Data Reporting

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The sole purpose of this report and the associated services performed by Jacobs is to assess waste definitions and the implications for UK waste data reporting in accordance with the scope of services set out in the contract between Jacobs and Defra. That scope of services, as described in this report, was developed with Defra.

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1. Introduction

Some waste-stream definitions utilised by EU Member States and agencies are not fully harmonised, leading to disparities in the reported performance and perceived performance of those countries and bodies in relation to waste management. Moreover, the current Review of EU Waste Policy and Legislation¹ includes a scheduled review of waste management targets within the Waste Framework Directive, Landfill and Packaging & Packaging Waste Directives. This review of EU Waste Policy and Legislation is commonly referred to as the Target Review Project and the European Commission's objective for the Target Review Project is *"to lay the ground for more effective design of waste legislation that further promotes the application of the waste hierarchy, removes ambiguity, and improves legal certainty; thus making legislation clearer, more effective and more easily enforceable"*²

The Target Review Project may therefore lead to changes to a range of waste management definitions applied to different wastes and their treatments, in order to align these across different Directives and increase the consistency of reporting across member states.

Therefore as part of the Defra study looking at the development of a new methodology to estimate waste generation by the commercial and industrial sector in England, Defra wanted to understand the likely impacts for the UK of potential changes and the implications for waste data reporting that may result from the Target Review Project. Jacobs was therefore commissioned to:

- collate the key definitions in the Waste Framework Directive, Landfill and Packaging & Packaging Waste Directives that might reasonably become subject to re-alignment or harmonisation;
- provide an initial assessment of the likely implications for the UK and in particular how the UK's progress against targets might be affected by changes to definitions in the above Directives, especially 'recyclable', 'recycled', 'biodegradable' and 'municipal'. Other terms where definitional issues may arise are 'household waste' and 'backfilling';
- assess the potential implications of definitional changes on existing targets or new targets, with regard to impacts on UK policy, performance against targets, UK waste management practices and data capture and reporting requirements; and
- identify where possible from publically available sources any important disparities between definitions used across EU Member States, and how the information could be used to inform the UK perspective on the impact for definitions, data collection, reporting and targets.

¹ http://ec.europa.eu/smart-regulation/impact/planned_ia/docs/2014_env_005_waste_review_en.pdf

² http://www.wastetargetsreview.eu/section.php/2/1/further_information/01ca6d46dbbb5dfde398bbe58e675c74

2. Analysis of Potential Re-alignment and Harmonisation of Particular Waste Definitions in Europe and the Implications for UK Waste Data Reporting

The current European Commission Review of EU Waste Policy and Legislation³ includes a scheduled review of waste management targets within the Waste Framework, Landfill and Packaging & Packaging Waste Directives. This paper summarises and assesses:

- key definitions and potential changes (Table 1); and
- targets / data requirements and potential changes (Table 2).

The key issues and implications identified through the assessment are summarised below:

- **Moving to a single definition for measuring recycling performance across all Member States based on municipal waste** as opposed to allowing Member States to select the calculation method. The UK has currently opted for the calculation method based on household waste. Moving to a calculation method based on municipal waste could prove difficult as a full data set for municipal waste is not captured at the point of origin and the quantity of waste managed through exempt facilities is also not captured. If the Commission require an improved evidence base to support the single calculation method there could be an increase in the data capture requirements in the UK.
- **Only materials that meet End of Waste (EoW) criteria can count towards recycling targets.** Applying EoW criteria to organic waste could result in a notable reduction in the amount of waste deemed to be recycled. This is because not all organic waste treatment facilities are accredited under the Compost Quality Protocol (which is a requirement for EoW in the UK) and as a result a proportion of material could change from being considered as recycled to being recovered.
- **Inclusion of a specific bio-waste recycling target** (potentially linked to EoW criteria/ quality standard). The inclusion of a bio-waste target could lead to bio-waste being included under the separate collection requirement in Article 11 (1). This could have significant implications for local authorities and other bio-waste producers if there was a requirement for the source segregation and thus separate collection of both food and garden wastes.
- **Increasing the preparing for re-use and recycling target:** It is likely that, once 50% recycling has been achieved, the Commission will set a new target, which could be 60% by 2025 or higher, as some Member States are already recycling more than 60% (Austria 63%, Germany 62% in 2010) and others above or close to 50% (Belgium 58%, Netherlands 51 %, Sweden 49 %, Luxembourg 47 %, in 2010).
- Future requirements and targets, under the Landfill Directive, are likely to look at potential options for **further restricting the biodegradable waste that can be accepted at landfill sites**, including:
 - Expanding biodegradable waste diversion targets to all waste streams and not just municipal
 - Ban recyclable and compostable waste from landfill;
 - Ban waste from landfill based on Total Organic Carbon (TOC) content, e.g. ban wastes with a TOC greater than 5%.

Such measures already exist in a number of the high performing Member States.

³ http://ec.europa.eu/smart-regulation/impact/planned_ia/docs/2014_env_005_waste_review_en.pdf

Table 1: Collation and Assessment of Key Definitions and Potential Changes

EU Directive	EU Definition and European Commission's View ⁴	UK Definition	Potential changes/issues	Implications for the UK
Waste Framework Directive (2008/98/EC)	<p>Bio-waste (Article 3(4)) means biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises and comparable waste from food processing plants.</p>	<p>The Waste (England and Wales) Regulations 2011: Regulation 3 (2) 'Terms which are used but not defined in these Regulations and are used in the Waste Framework Directive have the same meaning as in that Directive'. Regulation 9 (1) refers to bio-waste in relation to waste prevention plan policies, therefore the WFD definition is defined in UK legislation.</p>	<p>The definition is unlikely to change. However, the extension of the WFD recycling target to include bio-wastes scored quite well in the consultation and given the Commission's aspirational target of 'virtually eliminating' landfill it is likely that some form of target related to bio-wastes will be proposed. In addition a notable number of countries have a landfill ban on organic waste or non-pretreated MSW (Austria, Germany, Belgium, Netherlands, Switzerland, Sweden, Luxembourg, Denmark, Norway, France, Finland).</p>	<p>For the UK, one of the key issues would be the ability to quantify the total bio-waste arisings particularly in relation to restaurants, caterers and retail premises. In addition, there may be a move to limit bio-waste inputs into landfill, potentially through the Landfill Directive. See target implications in the Section on WFD Article 11 (2) (b) in Table 2.</p>
Waste Framework Directive (2008/98/EC)	<p>Treatment (Article 3(14)) means recovery or disposal operations, including preparation prior to recovery or disposal. European Commission's View Any waste treatment can only be either a recovery operation or a disposal operation; the European Court of Justice has explicitly stated that no operation can be classified as disposal and recovery at the same time</p>	<p>Term not specifically used in the Waste (England and Wales) Regulations 2011.</p>	<p>The definition is unlikely to change.</p>	<p>N/a</p>
Waste Framework Directive (2008/98/EC)	<p>Recovery (Article 3(15)) means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Annex II sets out a non-exhaustive list of recovery operations. 'Other recovery' is not specifically defined in the Directive In addition, incineration at "<i>facilities dedicated to the processing of municipal solid waste only</i>" is only considered as recovery if the facility meets the energy efficiency requirements set out in Annex II of the Directive. European Commission's View Recovery is divided into three sub-categories: preparing for re-use, recycling and other recovery. The fact that the waste has to serve a useful purpose 'as a principal result' of the recovery operation is an important aspect of distinguishing recovery from disposal operations. Classification of waste incineration facilities dedicated to the processing of municipal solid waste as recovery operations is based on efficient energy generation. Includes processes preparing a waste material in such a way that it no longer involves waste-related risks and is ready to be used as a raw material in other processes.</p>	<p>The Waste (England and Wales) Regulations 2011: Regulation 3 (2) 'Terms which are used but not defined in these Regulations and are used in the Waste Framework Directive have the same meaning as in that Directive'. Regulation 12 (1) sets out the duty in relation to the waste hierarchy, therefore the WFD definition is defined in UK legislation. However only 'other recovery' is used.</p>	<p>The definition is unlikely to change, cross-referenced in Packaging and Packaging Waste Directive.</p>	<p>N/a</p>
Waste Framework Directive (2008/98/EC)	<p>Disposal (Article 3(19)) means any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy. Annex I sets out a non-exhaustive list of disposal operations. European Commission's View Any waste treatment operation which does not meet the criteria of the recovery definition is by default considered to be disposal. The wording 'even where the operation has as a secondary consequence the reclamation of substances or energy' reflects by contrast the idea that any recovery operation must meet the criterion of 'the principal result' being 'waste serving a useful purpose' by substituting material which would otherwise have been used for that purpose.</p>	<p>The Waste (England and Wales) Regulations 2011: Regulation 3 (2) 'Terms which are used but not defined in these Regulations and are used in the Waste Framework Directive have the same meaning as in that Directive'. Regulation 12 (1) sets out the duty in relation to the waste hierarchy, therefore the WFD definition is defined in UK legislation.</p>	<p>The definition is unlikely to change, cross-referenced in Packaging and Packaging Waste Directive.</p>	<p>N/a</p>
Waste Framework Directive (2008/98/EC)	<p>Prevention (Article 3(12)) means measures taken before a substance, material or product has become waste, that reduce: (a) the quantity of waste, including through the re-use of products or the extension of the life span of products; (b) the adverse impacts of the generated waste on the environment and human health; or (c) the content of harmful substances in materials and products. European Commission's View 'Prevention' is not a waste management operation because it concerns substances or objects before they become waste.</p>	<p>The Waste (England and Wales) Regulations 2011: Regulation 3 (2) 'Terms which are used but not defined in these Regulations and are used in the Waste Framework Directive have the same meaning as in that Directive'. Regulation 12 (1) sets out the duty in relation to the waste hierarchy, therefore the WFD definition is defined in UK legislation.</p>	<p>While the definition is unlikely to change there is a clear potential for a waste prevent target.</p>	<p>See target implications in the Section on WFD Article 11 (2) (a) in Table 2.</p>

⁴ European Commission: Guidelines on the interpretation of key provisions of Directive 2008/98/EC on waste

EU Directive	EU Definition and European Commission's View ⁴	UK Definition	Potential changes/issues	Implications for the UK
<p>Waste Framework Directive (2008/98/EC)</p>	<p>Re-use and preparing for re-use Re-use (Article 3(13)) means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived. Preparing for re-use (Article 3(16)) means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing. European Commission's View Re-use is a means of waste prevention; it is not a waste-management operation. For example, if a person takes over a material, e.g. piece of clothing, directly from the current owner with the intention of re-using it (even if some repairing is necessary) for the same purpose, this comprises evidence that the material is not a waste. Preparing for re-use is a specific case of recovery. Material subject to it has previously been discarded by its owner and has become a waste.</p>	<p>The Waste (England and Wales) Regulations 2011: Regulation 3 (2) 'Terms which are used but not defined in these Regulations and are used in the Waste Framework Directive have the same meaning as in that Directive'. Regulation 12 (1) sets out the duty in relation to the waste hierarchy, therefore the WFD definition is defined in UK legislation. However only 'preparing for re-use' is used.</p>	<p>The definition is unlikely to change.</p>	<p>N/a</p>
<p>Waste Framework Directive (2008/98/EC)</p>	<p>Recycling (Article 3(17)) means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations. European Commission's View Recycling is where a waste material is processed in order to alter its physico-chemical properties allowing it to be used again for the same or other applications. It includes any physical, chemical or biological treatment leading to a material which is no longer a waste. Specific waste management activities that are classed as recycling: - Recycling of materials: e.g. plastic granulated and pelletised for extruding or moulding; crushed waste glass graded for blasting, sorting of waste paper to meet EoW criteria; and - Production of compost that meets EoW criteria. The reprocessing into materials that are to be used as fuels or for backfilling operations is excluded from recycling. Only the reprocessing of waste into products, materials or substances can be accepted as recycling. Processing of waste which still results in a waste which subsequently undergoes other waste recovery steps would not be considered recycling, but pre-treatment prior to further recovery. This would include operations like dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing if the material or substance resulting from such operations is still waste. End of Waste (EoW) criteria for compost from biowaste at EU level are currently under discussion. For the purposes of EC guidance, compost that has not ceased to be waste under any existing national standards and is used as a fertiliser is being recovered. However, regarding the question at what point a compost is recycled, Article 2(6) of the recently adopted Decision⁵ on recycling targets might be useful; it states 'Where the target calculation is applied to the aerobic or anaerobic digestion of biodegradable waste, the input to the aerobic or anaerobic treatment may be counted as recycled where that treatment generates compost or digestate which, following any further necessary reprocessing, is used as a recycled product, material or substance for land treatment resulting in benefit to agriculture or ecological improvement'. It should be noted that the recycling definition in the WFD is slightly different from the recycling definition used in Directives related to specific waste streams (e.g. Packaging Directive). Definitions of the term 'recycling' in these Directives, which are different from that of the EU Waste Framework Directive, remain in force, in particular for the calculation of targets.</p>	<p>The Waste (England and Wales) Regulations 2011: Regulation 3 (2) 'Terms which are used but not defined in these Regulations and are used in the Waste Framework Directive have the same meaning as in that Directive'. Regulation 12 (1) sets out the duty in relation to the waste hierarchy, therefore the WFD definition is defined in UK legislation.</p>	<p>Potential for the definition of recycling in the Packaging Directive to be alignment with the Waste Framework FD definition. Recycling requires a waste to be re-processed into a product, material or substance, for either the original or other purposes, so that the material has re-entered the productive cycle. No further processing should be required. A recycling operation is therefore different in nature to other recovery operations in that it will always result in the substance in question ceasing to be waste when it is transformed. The substance will cease to be waste before its final use. Therefore EoW criteria could be critical in the determination of when a waste is recycled as opposed to being recovered. Potential for targets to consider both closed and open loop recycling, which would probably need to be based around quality standards e.g. glass cullet used in container manufacture would be deemed to be recycled whereas glass into aggregate would be recovery. Again there is a link to the EoW criteria.</p>	<p>The alignment of the definitions is unlikely to cause any significant impacts as the definitions are broadly similar, with both: - referring to reprocessing for the original purpose or for other purposes; - including 'reprocessing of organic material' or 'organic recycling'; and - excluding energy recovery However the main issue could be the phrase "the reprocessing in a production process" Potential for materials, which are currently deemed to the recycled, to only be considered if they cease to be waste as a result of EoW criteria or achievement of an agreed quality standard (e.g. PAS100/CQP). See target implications in the Section on WFD Article 11 (2) (a) in Table 2. See target implications in the Section on WFD Article 11 (2) (a) in Table 2.</p>
<p>Waste Framework Directive (2008/98/EC)</p>	<p>Household – no specific definition in the WFD, which refers in a number of places to "private households"</p>	<p>Only mentioned in the Waste (England and Wales) Regulations 2011 by reference to the definition of controlled waste and hence the link to household waste.</p>	<p>Unlikely that a new definition would be introduced</p>	<p>N/a</p>

⁵ 2011/753/EU

EU Directive	EU Definition and European Commission's View ⁴	UK Definition	Potential changes/issues	Implications for the UK
<p>Waste Framework Directive (2008/98/EC)</p>	<p>Backfilling - no specific definition in the WFD. Article 2(6) of Commission Decision (2011/753/EU) establishing rules and calculation methods for verifying compliance with the targets set in Article 11 (2) of Directive 2008/98/EC states that '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'. European Commission's View 'Backfilling' is explicitly accepted by Article 11(2) (b) WFD as a recovery operation. Backfilling operations meeting the recovery definition and in compliance with Articles 4 and 13 of the WFD would be considered as "other recovery" It should be stressed that one of the conditions of this definition is that the operation concerned meets the recovery definition of Article 3(15) WFD, which has to be assessed depending on the specific circumstances of the operation planned in the light of the objectives of the WFD. The fact that an operation is referred to as 'backfilling' by the operator does not automatically make the operation a recovery operation.</p>	<p>Not mentioned in the Waste (England and Wales) Regulations 2011.</p>	<p>Unlikely to be a change in the definition, however strict interpretation of could have implication for the achievement of the target under Article 11(2)(b) on the re-use, recycling and other material recovery of construction and demolition waste. This is because for backfilling to be a recovery operation, waste need to be a substitute for non-waste material and often quarry restorations only take place when there is waste excavated material available and non-waste material would not be substituted as there would never be an intention to restore a quarry with non-waste materials.</p>	<p>See target implications in the Section on WFD Article 11 (2) (b) in Table 2.</p>
<p>Waste Framework Directive (2008/98/EC)</p>	<p>Material definitions e.g. paper, metal, plastic and glass. There are no material specific definitions in the WFD, also 'recyclable product' is not defined. However for the purpose of calculating targets the Commission Decision 2011/753/EU (Annex II) does define materials by reference to specific EWC codes.</p>	<p>The Waste (England and Wales) Regulations 2011: Regulation 3 (2) 'Terms which are used but not defined in these Regulations and are used in the Waste Framework Directive have the same meaning as in that Directive'. Specific materials are mentioned in Regulations 13 and 14 in relation to the duty to collect recyclable waste by January 2015.</p>	<p>While the definitions of the existing materials are unlikely to change, the range of materials subject to the separate collection requirement under Article 11(1) could increase in the future to include wood, textiles. Such a change could to be accompanied by an increase in the WFD recycling target as an increased range of materials would suggest a greater quantity of material could be the recycled.</p>	<p>See target implications in the Section on WFD Article 11 (2) (a) in Table 2.</p>
<p>Landfill Directive (99/31/EC)</p>	<p>Biodegradable waste (Article 2(m)) means any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and paperboard.</p>	<p>Waste and Emissions Trading Act 2003 Section 21 (1) - "biodegradable waste" means any waste that is capable of undergoing anaerobic or aerobic decomposition, such as— food and garden waste, and paper and paperboard. Landfill (England and Wales) Regulations 2002 uses the same definition.</p>	<p>There is a clear distinction between biodegradable waste and bio-waste (see WFD definition above).</p> <ul style="list-style-type: none"> - Bio-waste is a subset of biodegradable waste, consisting of biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises and comparable waste from food processing plants. - Biodegradable waste also includes waste such as natural textiles, paper or processed wood. <p>The definitions are unlikely to change although there is likely to be on-going debate about when a material is biodegradable. However while the definition of biodegradable waste may not change, there may be greater restrictions on the biodegradable waste that can be accepted at landfill sites, measures could include:</p> <ul style="list-style-type: none"> - Expanding the scope of biodegradable waste diversion targets to include all waste streams and not just municipal; - Ban recyclable and compostable waste from landfill; - Ban waste from landfill based on Total Organic Carbon (TOC) content, e.g. ban wastes with a TOC greater than 5%. 	<p>While likely to have implications beyond 2020, potential changes are unlikely to have implications for the existing Landfill Directive Article 5 biodegradable waste diversion targets.</p>

EU Directive	EU Definition and European Commission's View ⁴	UK Definition	Potential changes/issues	Implications for the UK
Landfill Directive (99/31/EC)	Biodegradable municipal waste not specifically defined but a combination of the above and "municipal waste" (Article 2(e)) which means waste from households, as well as other waste which, because of its nature or composition, is similar to waste from households.	Waste and Emissions Trading Act 2003 Section 21 (2) - "biodegradable municipal waste" means waste that is both biodegradable waste and municipal waste. Section 21 (3) - In subsection (2) "municipal waste" means— (a) waste from households, and (b) other waste that, because of its nature or composition, is similar to waste from households. The Waste and Emissions Trading Act 2003 (Amendment) Regulations 2011 introduced the term "local authority collected municipal waste".	The definition is unlikely to change	An alignment of the definition of municipal across Member States and a legal obligation to report against it is unlikely to cause significant impacts, as the UK has already adopted the European definition.
Packaging and Packaging Waste Directive (94/62/EC)	Prevention (Article 3(4)) mean the reduction of the quantity and of the harmfulness for the environment of: - materials and substances contained in packaging and packaging waste, - packaging and packaging waste at production process level and at the marketing, distribution, utilisation and elimination stages, in particular by developing 'clean` products and technology.	Not defined in the Producer Responsibility Obligations (Packaging Waste) Regulations 2007.	Potential for the definition of prevention in the Packaging Directive to be aligned with the Waste Framework Directive definition.	The alignment of the definitions is unlikely to cause any significant impacts.
Packaging and Packaging Waste Directive (94/62/EC)	Re-use (Article 3(5)) mean any operation by which packaging, which has been conceived and designed to accomplish within its life cycle a minimum number of trips or rotations, is refilled or used for the same purpose for which it was conceived, with or without the support of auxiliary products present on the market enabling the packaging to be refilled; such that reused packaging will become packaging waste when no longer subject to reuse	The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 Regulation 2 (2): "reuse" has the meaning given to it in Article 3(5) of the Packaging Waste Directive.	Potential for the definition to be aligned to the Waste Framework Directive definition.	The definition in the Packaging and Packaging Waste Directive is focussed on the re-use of packaging and could potentially combine elements of the Waste Framework Directive definitions of re-use and preparing for re-use. The terminology of "is refilled or used for the same purpose for which it was conceived, with or without the support of auxiliary products present on the market enabling the packaging to be refilled" could be considered as "cleaning" depending on the nature of the 'ancillary products' e.g. some form of cleaning product. There is consistency between the definitions in the fact that once a material is no longer being reused it becomes waste.
Packaging and Packaging Waste Directive (94/62/EC)	Recycling (Article 3(7)) means the reprocessing in a production process of the waste materials for the original purpose or for other purposes including organic recycling but excluding energy recovery.	The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 Regulation 2 (2): "recycling" has the meaning given to it in Article 3(7) of the Packaging Waste Directive; and "recycle" shall be construed accordingly;	Potential for the definition to be aligned to the Waste Framework Directive definition.	The alignment of the definitions is unlikely to cause any significant impacts as the definitions are broadly similar, with both: - referring to reprocessing for the original purpose or for other purposes; - including 'reprocessing of organic material' or 'organic recycling'; and - excluding energy recovery However there could be an issue with the phrase " <i>the reprocessing in a production process</i> " as some recycling activities may not be considered as " <i>a production process</i> " e.g. composting. Therefore may be a need to define what is deemed to be " <i>a production process</i> "
Packaging and Packaging Waste Directive (94/62/EC)	Recovery (Article 3(6)) means any of the applicable operations provided for in Annex II.B to Directive 75/442/EEC References to the repealed Directive 75/442/EEC shall be construed as references to the Waste Framework Directive 2008/98/EC	The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 Regulation 2 (2): "recovery" means any of the applicable operations provided for in Annex IIB to the Waste Directive and for the purposes of these Regulations. Incineration at waste incineration plants with energy recovery shall be treated as if it is recovery; and "recover" and "recovery operation" shall be construed accordingly.	The definition is unlikely to change as it is aligned to the Waste Framework Directive definition.	N/a

EU Directive	EU Definition and European Commission's View ⁴	UK Definition	Potential changes/issues	Implications for the UK
Packaging and Packaging Waste Directive (94/62/EC)	Energy recovery (Article 3(8)) means the use of combustible packaging waste as a means to generate energy through direct incineration with or without other waste but with recovery of the heat.	The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 Regulation 2 (2): "energy recovery" has the meaning given to it in Article 3(8) of the Packaging Waste Directive.	Energy recovery is not specifically defined in the Waste Framework Directive, although municipal waste incineration facilities are only considered as recovery facilities if they meet the energy efficiency requirements set out in Annex II, R1 of the Waste Framework Directive. Therefore, there is potential for the definition in the Packaging Waste Directive to be aligned to energy efficiency requirements in the Waste Framework Directive.	The definition of recovery in the Packaging Waste Directive is aligned to the Waste Framework Directive definition, which makes reference to Annex II and hence the energy efficiency requirement. Therefore packaging incinerated in municipal waste incineration facilities would be considered as being recovered if the facilities were deemed to be a R1 recovery operation. Also if packaging material is burnt, in a non-municipal facility, principally as a fuel or means of generating energy, it would be considered as recovery.
Packaging and Packaging Waste Directive (94/62/EC)	Organic recycling (Article 3(9)) means the aerobic (composting) or anaerobic (biomethanisation) treatment, under controlled conditions and using micro-organisms, of the biodegradable parts of packaging waste, which produces stabilised organic residues or methane. Landfill shall not be considered a form of organic recycling	The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 Regulation 2 (2): "organic recycling" has the meaning given to it in Article 3(9) of the Packaging Waste Directive;	Organic recycling is not specifically defined in the Waste Framework Directive. However recycling is defined and organic recycling just provides a greater level of detail related to the recycling of biodegradable packaging.	N/a
Packaging and Packaging Waste Directive (94/62/EC)	Disposal (Article 3(10)) shall mean any of the applicable operations provided for in Annex II.A to Directive 75/442/EEC References to the repealed Directive 75/442/EEC shall be construed as references to the Waste Framework Directive 2008/98/EC	The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 Regulation 2 (2): "disposal" has the meaning given to it in Article 3(10) of the Packaging Waste Directive;	The definition is unlikely to change as it is aligned to the Waste Framework Directive definition.	N/a
Packaging and Packaging Waste Directive (94/62/EC)	Material definitions e.g. paper, metal, plastic and glass. There are no material specific definitions.	The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 Regulation 2 (2): "recyclable material" means— (a) glass; (b) aluminium; (c) steel; (d) paper/board; (e) plastic; or (f) wood, and packaging materials composed of a combination of any of those materials are to be treated as made of the material which is predominant by weight.	The list of materials in UK regulation already covers the majority and covers the materials that people would expect to see. Therefore the definition is unlikely to change.	N/a

Table 2: Collation and Assessment of Targets/Data Requirements and Potential Changes

EU Directive	Waste Framework Directive (2008/98/EC)	Article	11 (2) (a)
<p>Target on Municipal Waste: “by 2020, the preparing for re-use and the recycling of waste materials such as at least paper, metal, plastic and glass from households and possibly from other origins as far as these waste streams are similar to waste from households, shall be increased to a minimum of overall 50 % by weight”</p>			
Reporting requirement			
<p>Reporting requirements are set out in Commission Decision 2011/753/EU, which allows Member States to select one of the following Calculation Method to measure compliance against the Article 11 (2) (a) target:</p> <ol style="list-style-type: none"> 1. the preparation for reuse and the recycling of paper, metal, plastic and glass household waste; 2. the preparation for reuse and the recycling of paper, metal, plastic, glass household waste and other single types of household waste or of similar waste from other origins; 3. the preparation for reuse and the recycling of household waste; 4. the preparation for reuse and the recycling of municipal waste. <p>The Decision includes a specific calculation method for each option (Annex I) and Member States are required to provide a report detailing how the quantities relate to the figures reported under the EU Waste Statistics Regulations.</p> <p>Article 2 (6) states that: “Where the target calculation is applied to the aerobic or anaerobic treatment of biodegradable waste, the input to the aerobic or anaerobic treatment may be counted as recycled where that treatment generates compost or digestate which, following any further necessary reprocessing, is used as a recycled product, material or substance for land treatment resulting in benefit to agriculture or ecological improvement.”</p> <p>Information on the Calculation Methods adopted by other Member States is not readily available and does not appear to be publically reported by the Commission.</p>			
UK targets			
<p>The approach to recycling and composting targets vary across the UK ,with each part of the UK adopting different targets:</p> <ul style="list-style-type: none"> - England: 50% recycling and composting of household waste by 2020 - Wales: 64% recycling and composting of local authority collected municipal waste by 2020 - Scotland: 60% recycling and composting of household waste by 2020 - Northern Ireland: 50% recycling and composting of local authority collected municipal waste by 2020, with proposal to increase it to 60%. <p>In terms of reporting to Europe, the UK has adopted Calculation Method 3, the preparation for reuse and the recycling of household waste, as the means of reporting UK performance against Article 11 (2) (a) target. The calculation is:</p> $\text{Recycling rate of household waste (\%)} = \frac{\text{Recycled amount of household waste}}{\text{Total household waste amounts excluding certain waste categories}}$			
Potential Changes to Existing Targets	Implications		
<p>Moving to a single definition of recycling across all Member States as opposed to allowing Member States to select the compliance measure. The current Decision allows member states to use either household or municipal waste; a single definition is likely to use municipal waste. This could potentially be accompanied by increased monitoring and validation requirements across Member States.</p>	UK practices	<p>As indicated above the UK has opted to report against household waste recycling, which is probably as a result of the quality of the available data.</p> <p>A full data set for municipal waste is not captured at the point of origin (i.e. producers are not required to report on the quantities of waste generated) and the quantities of municipal waste (total and recycled) needs to be estimated from waste facility permit returns data. However data on the quantity of waste managed through exempt facilities is not captured which could result in the municipal recycling rate being underestimated as much of the waste managed through exempt facilities is recycled/recovered.</p>	
	Implications/ issues	<p>Use of a single definition of recycling based on municipal waste would require some waste quantities to be estimated and would be partly reliant on the assumptions made about waste managed through exempt facilities.</p> <p>At present, reporting against household waste recycling is relatively straightforward for the UK due to the data captured by WasteDataFlow, as local authorities report on the destination of all recyclable materials including the material that is managed through exempt facilities. However, providing a clear picture of</p>	

EU Directive	Waste Framework Directive (2008/98/EC)	Article	11 (2) (a)
			<p>municipal waste recycling could prove difficult because, as highlighted above, waste managed through exempt facilities is not captured through current data systems. Significant quantities of recyclable material can be managed under exemptions e.g. under exemption T4: Preparatory treatments (baling, sorting, shredding etc), weekly treatment limits include:</p> <ul style="list-style-type: none"> - 5,000 tonnes of glass; - 3,000 tonnes of paper and cardboard; - 3,000 tonnes of plastic; - 3,000 tonnes of textiles and clothes; <p>which means that over 150,000 tonnes per annum of these materials can be managed without any tonnage data being captured. In addition, under this exemption an activity could handle a single material or combinations of multiple materials and there is no requirement to indicate the range of material or anticipated quantities handled when registering the exemption.</p> <p>The use of a single definition could improve the recycling performance reported to the Commission by the UK, as higher levels of recycling could be achieved for the non-local authority collected municipal waste. However there could be a call to improve the evidence base if such an approach is adopted. In addition, increased monitoring and validation requirements could result in the Commission looking for improved data capture systems across all waste streams. This could increase the requirement for industry related to data capture e.g. a requirement for exempt facilities to report types and quantities managed.</p>
	Data requirements		<p>The Commission's view is that, for the purpose of reporting generation and treatment, the definition of municipal waste should be that used in OECD/Eurostat Joint Questionnaire on waste.</p>
	Data capture		<p>As indicated above the data would need to be extracted from returns data although there are gaps associated with exempt facilities.</p>
<p>Only materials that meet EoW criteria can count towards recycling targets. This is consistent with the definition of recycling because for a material to be recycled it must cease being a waste.</p> <p>This could have potential implications for when composted materials are deemed to be recycled, as only material composted/digested to PAS100/PAS110 or the Compost Quality Protocol (CQP) would count towards recycling.</p>	UK practices		<p>In England, the amount of segregated household waste composted is based on WDF data which records the quantities of organic waste sent for "Anaerobic or Aerobic Digestion", "In-Vessel Composting" and "Windrow or other composting". WDF does not request or record whether the facilities where material is sent are PAS100/ PAS110/CQP certified.</p> <p>At the end of 2013 recorded on REAL's Compost Certification Scheme⁶ there were:</p> <ul style="list-style-type: none"> - 24 PAS 100 'only' certified processes with a total input of 330ktpa; and - 152 PAS 100 & CQP certified processes with a total input of 2,996ktpa <p>Given that approximately 4million tonnes of source segregated organic waste from local authorities were sent for composting between July 2012 and June 2013, it would suggest that a notable tonnage would not be counted as recycled if EoW criteria were applied. An initial assessment of the destinations reported in WDF suggests that approximately half of the tonnage sent to composting can be easily linked to certified processes.</p>

⁶ Renewable Energy Assurance Limited operates a Compost Certification Scheme. January 2013, the Association for Organics Recycling became the Organics Recycling Group within the Renewable Energy Association. AfOR's Compost Certification Scheme and the partnership certification services it provided are now operated by Renewable Energy Assurance Limited, a wholly owned subsidiary of the REA. <http://www.organics-recycling.org.uk/page.php?article=1797&name=Composters+on+REAL%27s+Compost+Certification+Scheme+>

EU Directive	Waste Framework Directive (2008/98/EC)	Article	11 (2) (a)
			<p>In addition, Compost Like Output (CLO) from MBT processes cannot meet the CQP and would not count as recycling because it is not collected source-segregated. However CLO is currently included in the National Indicator calculation.</p> <p>In Austria, the biologically treated residues from MBT (271 000 tonnes in 2009 or 7%) do not fulfil the compost criteria and are landfilled. However, in the reports to Eurostat, the biologically treated output from MBT was allocated to the category 'compost'.⁷</p>
	Implications/ issues		<p>Applying EoW criteria to organic waste could see a notable reduction in the amount of waste deemed to be recycled. A proportion could also change from being recycled to being recovered which could not then be included in the recycling target.</p> <p>If there was a change, local authorities are likely to require the composting facilities they use to be PAS 100 & CQP compliant. However this may take some time depending on the contract arrangements and may increase the cost for authorities who are currently not using PAS 100 & CQP compliant facilities.</p> <p>In addition, some CQP certified facilities may operate under a permitting exemption, so the quantity of non-local authority collected waste managed at such facilities would not be captured through current data systems.</p>
	Data requirements		<p>To demonstrate compliance, there would be a need to cross-reference the sites used for composting with the PAS 100 & CQP certified facilities and potentially identify the output tonnages that achieved the CQP standard.</p> <p>If a single definition of recycling based on municipal waste were to be adopted, there would be a need to capture/estimate the composting of waste from non-local authority sources and whether outputs tonnages met the CQP standard.</p>
	Data capture		<p>For local authority collected wastes the information could be captured through WasteDataFlow, using the Welsh approach where local authorities are required to report in the end destinations of all wastes they collect.</p> <p>For waste from non-local authority sources, the information would probably need to be captured/ estimated from the facility returns. However some facilities may be covered by exemptions and some of the inputs may not be municipal waste, for example food preparation wastes (EWC Chapter 2).</p>
<p>Moving to a differentiation between different levels of the waste hierarchy in particular between "recycling" and "other recovery", with the aim of encouraging practices which are deemed to be more sustainable and so consistent with the application of the hierarchy. For example glass to re-melt being considered as recycling with glass to aggregate being considered as recovery. This again has links to EoW criteria discussion above.</p>	UK practices		<p>There are currently two main options for recycling glass:</p> <ul style="list-style-type: none"> - closed loop recycling through re-melt, whereby glass ('cullet') collected for recycling is used in new glass products, replacing virgin glass. - open loop recycling, for example through use as aggregates, where the glass is blended with other aggregates in various applications (e.g. road surfaces). <p>The environmental benefits of using glass in open loop recycling is negligible, because of the relatively low environmental impact of the virgin aggregate being replaced.</p> <p>There are currently EoW criteria for glass cullet destined for re-melt but nothing for glass cullet going to other uses.</p> <p>Currently only half of the glass collected for recycling in the UK is re-melted in to containers. The remainder is used in other applications such as aggregate in road construction or in fibreglass insulation manufacture⁸</p>

⁷ EEA, Municipal waste management in Austria. March 2013

⁸ WRAP: Information sheet - Recycling glass in the hospitality sector

EU Directive	Waste Framework Directive (2008/98/EC)	Article	11 (2) (a)
			<p>In 2011/12, a total of 1.62million tonnes of glass packaging were collected for recycling⁹. Of which:</p> <ul style="list-style-type: none"> - ~760kt was sent for re-melt (590kt to container re-melt and 170kt to fibreglass re-melt) - ~550kt to non-re-melt (99% of which was for aggregate) - ~310kt exported
	Implications/ issues		<p>If a distinction were to be made between “recycling” and “other recovery” for glass based on its end destination, there could be a notable reduction in the amount of glass deemed to be recycled. If re-melt is considered as recycled and aggregate as recovery, this could reduce the current English recycling rate by approximately 2% (clearly this would depend on whether household or municipal recycling waste is being considered).</p>
	Data requirements		<p>Data would need to differentiate between the different end uses of materials.</p>
	Data capture		<p>Data could be captured from accredited UK PRN processors and exporters, however this would not necessarily link back to the source of the glass, which may have implications depending on the basis of the recycling rate definition (i.e. household or municipal)</p> <p>For local authority collected wastes the information could be captured through WasteDataFlow.</p>
<p>Extending the range of materials specifically covered by the target, to include materials such as wood, food waste, textiles. This could potentially have implications for the materials covered by the separate collection requirement in Article 11 (1).</p>	UK practices		<p>The target refers to the “<i>the preparing for re-use and the recycling of waste materials such as paper etc</i>”. Therefore extending the scope of the target to include additional materials would not change the UK approach, which reports on all household waste which is prepared for re-use or recycled. However a potential effect of including extra materials in the definition of the target could be to add them to the list of materials that would need to be separately collected.</p> <p>Also increasing the range of materials within the scope of the target could be used to provide a justification for increasing the percentage recycling rate if the calculation is based on total household or municipal waste recycled (current Calculation Methods 3 and 4) as opposed to 50% percentage of the specified materials (current Calculation Methods 1 and 2).</p>
	Implications/ issues		<p>There are no specific issues with including additional specified materials in the definition of the target because the reporting option selected by the UK, reports on all recycling of household waste. Potential implications could arise if:</p> <ul style="list-style-type: none"> - A single calculation method based on the percentage of the specified materials recycled was adopted. One of the issues would be accurately defining the denominator due to the lack of compositional data available. - The materials covered by the separate collection requirement in Article 11 (1) were extended to cover additional specified materials such as textiles. Only 30% of local authorities in England collect textiles at the kerbside, with a similar number providing separate food waste collections in 2012/13¹⁰. In addition, we are unaware of any local authorities that separately collect wood. <p>If a single definition of recycling based on municipal waste were to be adopted, there would be a need to capture/estimate tonnages from non-local authority sources.</p>

⁹ WRAP/Valpak: GlassFlow 2012 (October 2013)

¹⁰ WRAP Data Portal: LA waste and recycling scheme search 2012/13

EU Directive	Waste Framework Directive (2008/98/EC)	Article	11 (2) (a)
	Data requirements	Quantities of materials recycled for both local authority and other municipal sources.	
	Data capture	<p>For local authority collected wastes the information is already captured through WasteDataFlow.</p> <p>However as with a number of the potential changes, if a single definition of recycling based on municipal waste were to be adopted, there would be a need to capture/estimate recycling information for materials from non-local authority sources.</p>	
<p>Inclusion of a specific bio-waste recycling target potentially linked to EoW criteria/ quality standard.</p> <p>Bio-waste (Article 3(4)) means biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises and comparable waste from food processing plants.</p>	UK practices	<p>Only Scotland has a legal requirement for the separate collection of food waste. Most local authorities in the England offer services which collect some proportion of bio-waste but the approach and coverage varies with:</p> <ul style="list-style-type: none"> - ~30% of Waste Collection Authorities (WCAs) separately collecting food waste - ~95% of WCAs collecting garden waste at the kerbside of which 38% of the services are charged for (some of these service also collect food and/or cardboard with the garden waste) <p>There is no requirement in England for the separate collection of bio-waste from restaurants, caterers and retail premises and comparable waste from food processing plants.</p> <p>The bio-waste collected by local authorities is already incorporated in the recycling figures reported to the Commission under Calculation Method 3 (% of household waste recycled).</p>	
	Implications/ issues	<p>The inclusion of a bio-waste target could lead to bio-waste being included under the separate collection requirement in Article 11 (1). This could have significant implications for local authorities and other bio-waste producers if there was a requirement for the source segregation and collection of both food and garden wastes.</p> <p>As with other potential changes, the ability to compost/digest the bio-waste to EoW standards could influence the ability to achieve any recycling target.</p> <p>In Germany the collection of bio-waste will be mandatory from the start of 2015¹¹. In Austria, there is an obligation for the collection of bio-waste.</p> <p>In terms of a bio-waste recycling target, in 2010, Austria, Netherlands, Belgium and Luxembourg all reported a bio-waste recycling rate (as a percentage of municipal waste) of over 20%. Sweden has set a target 50% of food waste from households, institutional kitchens, shops and restaurants be sorted out and treated biologically by 2018 (although it is unclear whether this is a statutory requirement)</p>	
	Data requirements	<p>To demonstrate compliance, there would be a need to cross-reference the sites used for composting with the PAS 100 & CQP certified facilities and potentially identify the output tonnages that achieved the CQP.</p> <p>If a single definition of recycling based on municipal waste were to be adopted, data on composting/digestion of waste from non-local authority sources and whether it met the CQP, would be required.</p>	

¹¹ EEA, Municipal waste management in Germany. March 2013

EU Directive	Waste Framework Directive (2008/98/EC)	Article	11 (2) (a)
	Data capture		<p>For local authority collected wastes the information is already captured through WasteDataFlow</p> <p>If a single definition of recycling based on municipal waste were to be adopted, there would be a need to capture/estimate recycling tonnages from non-local authority sources. This would be quite likely for a bio-waste target as the definition includes restaurants, caterers and retail premises and comparable waste from food processing plants.</p>
Potential Changes Beyond 2020			
<p>Introduction of waste prevention targets: Given the focus on the waste hierarchy, the introduction of waste prevention targets would provide a means of assessing the performance of Waste Prevention Plans. A waste prevention target would probably be based on kg/capita with the figure reducing over time. As there is a significant variation in the kg/capita across Europe (300kg/capita to 750kg/capita) partly due to the variation in the definitions used, percentage reductions over time could be adopted. In addition to overcome the problems of using municipal waste generation as a proxy to measure waste prevention, a common definition of municipal waste would probably be required (this issue is discussed above). In Flanders, a maximum threshold for residual waste generation has been set, 180 kg per inhabitant at the Flemish municipality level¹².</p> <p>Increasing the preparing for re-use and recycling target: It is likely that, once 50% recycling has been achieved, the Commission will set a new target, which could be 60% by 2025 or higher, as some of Member states are already recycling more than 60% (Austria 63%, Germany 62% in 2010) and others above or close to 50% (Belgium 58%, Netherlands 51 %, Sweden 49 %, Luxembourg 47 %, in 2010).</p> <p>Introduce recycling targets for commercial and industrial wastes: Historically there has been a focus on municipal waste; however, setting recycling targets for all sectors could be a logical approach to drive resource efficiency.</p>			

EU Directive	Waste Framework Directive (2008/98/EC)	Article	11 (2) (b)
<p>Target for Construction & Demolition Waste:</p> <p>"by 2020, the preparing for re-use, recycling and other material recovery, including backfilling operations using waste to substitute other materials, of non-hazardous construction and demolition waste excluding naturally occurring material defined in category 17 05 04 in the list of waste shall be increased to a minimum of 70 % by weight"</p>			
Reporting requirement			
<p>Reporting requirements are set out in Commission Decision 2011/753/EU, based around EWC Chapter 17 codes and a limited number of codes from EWC Chapter 19.</p> <p>Decision 2011/753/EU uses the phrase "materially recovered" and Article 2 (2) states:</p> <p>"The weight of the waste prepared for reuse, recycled or materially recovered shall be determined by calculating the input waste used in the preparation for reuse or the final recycling or other final material recovery processes. A preparatory operation prior to the submission of the waste to a recovery or disposal operation is not a final recycling or other final material recovery operation. Where waste is collected separately or the output of a sorting plant is sent to recycling or other material recovery processes without significant losses, that waste may be considered the weight of the waste which is prepared for reuse, recycled or has undergone other material recovery."</p> <p>With the calculation being:</p> $\text{Recovery rate of construction and demolition waste; in \%} = \frac{\text{Materially recovered amount of construction and demolition waste}}{\text{Total amount of generated construction and demolition waste}}$			
UK targets			
<p>The approach to construction & demolition waste targets vary across the UK with different targets being adopted:</p> <ul style="list-style-type: none"> - England: 70% recovery of construction & demolition waste by 2020 - Wales: 90% prepared for reuse, recycled or recovered by 2019/20 - Scotland: 70% recycling and preparing for reuse of construction and demolition waste by 2020 - Northern Ireland: achieve a recovery rate (including preparing for re-use, recycling and other material recovery) of 70% for all non-hazardous Construction and Demolition waste by 2020. 			

¹² EEA, Municipal waste management in Belgium. March 2013

EU Directive	Waste Framework Directive (2008/98/EC)	Article	11 (2) (b)
Potential Changes to Existing Targets		Implications	
<p>Introduction of a clear definition of when backfilling is considered to be recovery as opposed to being a disposal operation.</p> <p>For backfilling to be a recovery operation, waste needs to be a substitute for non-waste material.</p>	<p>UK practices</p>	<p>EA guidance¹³ sets out the EA's approach to determining whether an activity is considered to be 'recovery' or 'disposal'. The EA's position is based on a legal test derived from the WFD and European case law and the guidance is designed to help applicants seeking a recovery permit for the permanent deposit of waste on land.</p> <p>The guidance states that the clearest indicator of waste recovery is when it can be shown that the waste used is a suitable replacement for non-waste materials that would otherwise have to be used to achieve the end benefit. This definition is based on the European court ruling that said '<i>the essential characteristic of a waste recovery option is that its principal objective is that the waste serve a useful purpose in replacing other materials which would have had to be used for that purpose, thereby conserving natural resources.</i>'¹⁴</p> <p>For an activity to be issued with an EA recovery permit the following tests are applied:</p> <ol style="list-style-type: none"> There must be a clear benefit. Waste can only be recovered if it is put to "beneficial use". The EA guidance states that "<i>it is not generally accepted that backfilling a quarry to its original levels is in itself a benefit for the purposes of the waste recovery test</i>" and that it is the end use of a restored mineral working that would need to be considered, e.g. bringing land into agricultural use. The waste material suitable for its intended use. The material must have the required chemical and engineering properties for the proposed end use and once deposited will not pose a risk to human health or the environment. The minimum amount of waste is being used to achieve the intended benefit. The waste is being used as a substitute for a non-waste material. The EA point out that demonstrating recovery is more difficult where it is not possible to state that the waste will actually be replacing a non-waste material. This is likely to be the case where the cost of importing non-waste materials would make the proposal unviable. The proposal is being completed to an appropriate standard. In particular are they designed and constructed in such a way that the operation does not cause soil erosion, pollution or increase the risk of flooding. <p>Therefore, the EA guidance is consistent with the Commission's view and the EA state that "<i>generally, backfilling a quarry is likely to be a disposal operation</i>".</p> <p>It should be noted that the application of the Landfill Tax provides fiscal support for the beneficial use of some excavated materials. The key exemptions from the application of Landfill tax¹⁵ are:</p> <ol style="list-style-type: none"> Restoration of a landfill site. Restoration is any work which the planning consent, the permit authorising disposal of waste on or in the land require to be carried out after waste disposal operations, in order to restore the site to a condition suitable for non-landfill use. The use of material to create or maintain a cell bund (landfill engineering). The use of mineral material, including clay, to form separate cells on the edge of the landfill as part of the 	

¹³ EA (2010) Defining Waste Recovery: Permanent Deposit of Waste on Land (EPR 13)

¹⁴ Abfall Service AG (ASA) C-6/00

¹⁵ Finance Act 1996 (sections 39 to 71 inclusive, and Schedule 5), as amended; Landfill Tax (Qualifying Material) Order 2011 as amended, Landfill Tax (Prescribed Landfill Activities) Order 2009 (SI 2009 No. 1929)

EU Directive	Waste Framework Directive (2008/98/EC)	Article	11 (2) (b)
			<p>engineered containment.</p> <p>c. Filling of quarries. If the material used is listed in the Landfill Tax (Qualifying Material) Order 2011 and the disposal takes place at a quarry, and there is planning consent in place to fill (or partially fill) the quarry, and the permit only authorises the disposal of qualifying material. The exemptions do not apply to "old quarries" which ceased operation before 1999 and for which there was no planning requirement to restore the site in place by 1999.</p> <p>This should not influence whether the activity is considered as a recovery or disposal operation.</p> <p>In 2012, approximately 7 million tonnes of excavates soil and stone (EWC 17 05 04) was deposited at sites categorised as A25: Deposit of waste to land is a recovery operation.¹⁶</p> <p>WRAP reported that 10.3 million tonnes mainly inert construction, demolition and excavation waste was beneficially used for landfill engineering / capping and quarry restoration in 2008¹⁷.</p> <p>There is also an exemption which could encompass some backfilling. Exemption U1: Use of Waste in Construction, allows the use of suitable wastes for small scale construction instead of using virgin raw materials. However there is no reported data on the quantities of waste managed under this exemption or the activities i.e. whether the activity is backfilling or not.</p> <p>The WRAP report on construction, demolition and excavation waste¹⁴ indicates that 10.98 million tonnes of construction, demolition and excavation waste was spread at exempt sites however this related to the previous exemption regime.</p>
		Implications/ issues	<p>In practice, decisions on whether the backfilling of a quarry is a recovery or disposal operation should be based on the permit issued by the EA, which are determined on a case by case basis. However, it is unclear how consistently the tests are applied as some quarry restorations are being granted recovery permits with apparently comparable quarry restorations being defined as disposal activities i.e. landfill.</p> <p>There is no data on the activities or quantities associated with Exemption U1, or to what extent it includes "backfilling".</p>
		Data requirements	Information on the quantity of backfilled material that is deemed to be recovered and not disposed would be required.
		Data capture	Information on permitted sites should be captured via EA returns data. However there is not currently a mechanism to capture material used under Exemption U1.
Potential Changes Beyond 2020			
<p>Requirement for the mandatory sorting of waste at construction and demolition sites: To ensure that the practices at construction and demolition sites maximise the recovery of construction & demolition waste, a requirement to separate materials for recycling/recovery could be introduced.</p>			

¹⁶ Environment Agency Waste Interrogator 2012

¹⁷ WRAP - Construction, demolition and excavation waste arisings, use and disposal for England 2008, April 2010

EU Directive	Landfill Directive (99/31/EC)	Article	5 (2)
<p>Targets for biodegradable municipal waste diversion from landfill:</p> <p>“(a) not later than five years after the date laid down in Article 18(1), biodegradable municipal waste going to landfills must be reduced to 75 % of the total amount (by weight) of biodegradable municipal waste produced in 1995 or the latest year before 1995 for which standardised Eurostat data is available</p> <p>(b) not later than eight years after the date laid down in Article 18(1), biodegradable municipal waste going to landfills must be reduced to 50 % of the total amount (by weight) of biodegradable municipal waste produced in 1995 or the latest year before 1995 for which standardised Eurostat data is available;</p> <p>(c) not later than 15 years after the date laid down in Article 18(1), biodegradable municipal waste going to landfills must be reduced to 35 % of the total amount (by weight) of biodegradable municipal waste produced in 1995 or the latest year before 1995 for which standardised Eurostat data is available.”</p> <p>and</p> <p>“Member States which in 1995 or the latest year before 1995 for which standardised EUROSTAT data is available put more than 80 % of their collected municipal waste to landfill may postpone the attainment of the targets set out in paragraphs (a), (b), or (c) by a period not exceeding four years. Member States intending to make use of this provision shall inform in advance the Commission of their decision. The Commission shall inform other Member States and the European Parliament of these decisions.”</p>			
Reporting requirement			
<p>Every 3 years submit a questionnaire on the implementation of the Directive (Commission Decision 2000/738/EC of 17 November 2000 concerning a questionnaire for Member States reports on the implementation of Directive 1999/31/EC on the landfill of waste).</p> <p>Next reporting date 30th September 2016.</p>			
UK targets			
<p>The UK was granted a four-year derogation to meet the targets imposed by the Directive. The amount of biodegradable municipal waste sent to landfill must therefore be reduced to:</p> <ul style="list-style-type: none"> - 75% (by weight) of 1995 production levels by 2010; - 50% (by weight) of 1995 production levels by 2013; and - 35% (by weight) of 1995 production levels by 2020. 			
Potential Changes to Existing Targets	Implications		
<p>Introduction of a standardised approach to reporting biodegradable waste diversion from landfill with a single definition of municipal waste identified for use by all Member States.</p>	<p>UK practices</p> <p>A full data set for municipal waste is not captured at the point of origin and the quantities of municipal waste (total and recycled) needs to be estimated from returns data. In addition, data on the quantity and type of waste managed through exempt facilities is not captured. So the quantity of biodegradable waste managed through exempt facilities is not known.</p> <p>It is assumed that the biodegradable content of municipal waste in England is 68% which is based on historical waste audit data to determine household waste composition.</p> <p>The other broad assumption relates to the biodegradability of separated fractions of municipal waste, which were derived from the National Household Waste Analysis Programme, published by Department of the Environment in 1993. The report states that waste types consisting of biogenic carbon are 100% biodegradable and waste types with no carbon or solely fossil carbon are not biodegradable (zero %) and those with a mixture to be 50%.</p> <p>This approach was recognised as not being wholly accurate but represented a pragmatic approach. The nominal biodegradable percentages¹⁸ are summarised below:</p>		

¹⁸ Landfill Allowances and Trading Scheme (England) Regulations 2004, now revoked

EU Directive	Landfill Directive (99/31/EC)	Article	5 (2)																												
		<p><u>Type of waste</u></p> <table border="0"> <tr> <td>Paper and Card</td> <td>100%</td> </tr> <tr> <td>Putrescible waste</td> <td>100%</td> </tr> <tr> <td>Vegetable oil</td> <td>100%</td> </tr> <tr> <td>Footwear</td> <td>50%</td> </tr> <tr> <td>Furniture</td> <td>50%</td> </tr> <tr> <td>Textiles</td> <td>50%</td> </tr> <tr> <td>Mineral oil</td> <td>0%</td> </tr> <tr> <td>Electrical and electronic equipment</td> <td>0%</td> </tr> <tr> <td>End-of-life vehicles</td> <td>0%</td> </tr> <tr> <td>Glass</td> <td>0%</td> </tr> <tr> <td>Inert construction and demolition waste</td> <td>0%</td> </tr> <tr> <td>Metal</td> <td>0%</td> </tr> <tr> <td>Plastic</td> <td>0%</td> </tr> <tr> <td>Soil</td> <td>0%</td> </tr> </table>	Paper and Card	100%	Putrescible waste	100%	Vegetable oil	100%	Footwear	50%	Furniture	50%	Textiles	50%	Mineral oil	0%	Electrical and electronic equipment	0%	End-of-life vehicles	0%	Glass	0%	Inert construction and demolition waste	0%	Metal	0%	Plastic	0%	Soil	0%	<p><u>Amount of biodegradable municipal waste</u></p> <p>In 2011, the UK definition of municipal waste was extended from local authority collected wastes to include commercial and industrial wastes similar to household waste and the UK biodegradable waste division targets were adjusted to reflect the additional tonnage. However there were no changes to the central assumption regarding the overall biodegradable content of municipal waste or the percentage biodegradability of separated fractions of municipal waste.</p>
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	<p>Implications/ issues</p>	<p>If a standard definition were introduced then, based on current datasets England would struggle to accurately quantify the amount of biodegradable municipal waste landfilled because:</p> <ul style="list-style-type: none"> - The biodegradable content of local authority collected waste has not been re-assessed since the Regulations were introduced in 2004 and the composition of the waste stream has changed. The Defra report “A Review of Municipal Waste Component Analyses” published in 2008/09 suggested that the biodegradable content of local authority collected waste is 66.7% compared to the 68% specified in the English Regulations. - There is no compositional analysis from which to estimate the biodegradable content of the non - local authority collected element of municipal waste. - While the fate (i.e. landfill or otherwise) of most local authority collected waste is recorded through WasteDataFlow, allowing a mass balance approach to be used to calculate biodegradable waste diversion. The fate of the non - local authority collected municipal waste is not fully reported through permitted facility returns. - Municipal wastes from non - local authority sources which are managed through exempt facilities are not reported which could result in the level of biodegradable waste diversion being underestimated. Many of the exempt activities will result in landfill diversion and this BMW diversion would not be captured through current data systems. <p>Therefore, the introduction of a standardised EU approach to reporting may mean that the UK has to rely on assumptions related to biodegradable waste composition and diversion, particularly for non - local authority collected municipal waste.</p> <p>At present the impact of a standard approach on the achievement of the target would be difficult to assess. The current Defra project on a new method for estimating C&I waste generation should allow some estimates to be made.</p> <p>In addition, the EU Target Review project gives no indication of the basis of a standardised reporting approach. A standardised approach could specify an assumed biodegradable content for</p>																													

EU Directive	Landfill Directive (99/31/EC)	Article	5 (2)
			<p>municipal waste and how diversion is to be calculated, which may be different to the mass balance approach adopted in the UK.</p> <p>There are also links to the potential adoption of a standard reporting definition of municipal waste (highlighted above).</p> <p>If the Commission require improved data capture systems across all waste streams and put in place increased monitoring and validation requirements, this could result in changes to how the UK captures some waste management data, for example wastes managed through exempt facilities.</p>
	Data requirements		<p>If a mass balance approach is to be used, then the quantity and fate of all municipal waste needs to be captured, plus the assumed biodegradable content of municipal waste.</p> <p>Alternatively, analysis of municipal waste entering landfill sites could be undertaken to determine the biodegradable content of landfilled municipal waste, which could be applied to all landfilled municipal waste. However the practicality, reliability and cost of such an approach, would probably mean that it would not be a viable option.</p>
	Data capture		<p>For local authority collected wastes the information could be captured through WasteDataFlow.</p> <p>For waste from non-local authority sources, the information would probably need to be captured/estimated from waste facility returns and there would need to be material specific of the amount of material managed. Some facilities may also be covered by exemptions from which no material specific tonnages are collected nor the final fate of material known.</p>
Introduction of a standardised definition of “pre-treatment” across all Member States.	UK practices		<p>The approach in England is that if there are schemes for the separate collection of recyclable materials, then the residual municipal waste would be deemed to have been treated. The EA guidance “Treatment of waste for landfill” states:</p> <p><i>“Local authorities may have a scheme in place to ensure that municipal waste is source segregated by providing for the separate collection of recyclable materials. This may apply to waste produced by householders or similar waste from commercial premises. Any residual municipal waste from such schemes can be regarded as treated for the purposes of the Landfill Directive. Where there is no source segregation of household or similar commercial waste, this waste will need to be separately treated prior to landfill (e.g. at a materials recovery facility). Similarly, where the LA carries out dedicated commercial mixed waste collections at premises where there are no commercial recycling services provided, this waste will need to be treated prior to landfill”.</i></p>
	Implications/ issues		<p>The EU Target Review provides no indication of how a standardised definition of “pre-treatment” would be defined.</p> <p>If source segregation was not deemed to be a pre-treatment method, because the residual waste has not been changed from the material placed in the bin, it would have significant implications for the UK.</p> <p>Therefore, if “pre-treatment” prior to landfill was required for a waste stream “as collected” e.g. residual municipal waste (EWC code 20 03 01), regardless of the extent of any source segregation activities, significant additional treatment capacity would be required. In 2012, over 8.2 million tonnes of mixed municipal waste was landfilled in England.</p> <p>This requirement would probably need to extend to all commercial, industrial, construction and demolition wastes.</p>

EU Directive	Landfill Directive (99/31/EC)	Article	5 (2)
	Data requirements	There would be no specific data requirement, as it would be an acceptance requirement on landfill sites, with sites only accepting wastes for which “pre-treatment” could be demonstrated.	
	Data capture	N/a	
Potential Changes Beyond 2020			
<p>Future requirements and targets are likely to look at potential options for restricting the biodegradable waste that can be accepted at landfill sites, including:</p> <ul style="list-style-type: none"> - Expanding biodegradable waste diversion targets to all waste streams and not just municipal - Ban recyclable and compostable waste from landfill; - Ban waste from landfill based on Total Organic Carbon (TOC) content, e.g. ban wastes with a TOC greater than 5%. <p>In terms of landfill restrictions in other Member States:¹⁹</p> <ul style="list-style-type: none"> - Austria has a landfill ban for untreated waste and the landfilling of waste with a TOC content greater than 5% is also banned (however, the treated outputs from MBT are excluded from this ban). - In Belgium, waste containing greater than 5% TOC is banned from landfilling, except for mechanically-biologically pre-treated waste. There has also been a ban on landfilling untreated waste, including biodegradable municipal waste since 2007. - Denmark has a ban on landfilling biodegradable MSW. - In Germany, only waste with less than 3 % TOC can be landfilled, and since 2005 only municipal waste with less than 5% carbon content can be directly landfilled and municipal MBT residues can be landfilled if they have less than 18% carbon content and a very low content of biodegradable organic carbon - Netherlands has a landfill ban on all combustible and biodegradable waste. - Sweden has a ban on landfilling of combustible waste and all organic waste, although there are exceptions in regions where the waste management capacity is significantly underdeveloped. - Italy has a landfill ban for waste with a calorific value exceeding 13 mega joules per tonne. 			

EU Directive	Packaging and Packaging Waste Directive (94/62/EC)	Article	6
<p>Packaging recycling and recovery targets:</p> <p>“(a) no later than 30 June 2001 between 50 % as a minimum and 65 % as a maximum by weight of packaging waste will be recovered or incinerated at waste incineration plants with energy recovery;</p> <p>(b) no later than 31 December 2008 60 % as a minimum by weight of packaging waste will be recovered or incinerated at waste incineration plants with energy recovery;</p> <p>(c) no later than 30 June 2001 between 25 % as a minimum and 45 % as a maximum by weight of the totality of packaging materials contained in packaging waste will be recycled with a minimum of 15 % by weight for each packaging material;</p> <p>(d) no later than 31 December 2008 between 55 % as a minimum and 80 % as a maximum by weight of packaging waste will be recycled;</p> <p>(e) no later than 31 December 2008 the following minimum recycling targets for materials contained in packaging waste will be attained:</p> <ul style="list-style-type: none"> (i) 60 % by weight for glass; (ii) 60 % by weight for paper and board; (iii) 50 % by weight for metals; (iv) 22.5 % by weight for plastics, counting exclusively material that is recycled back into plastics; (v) 15 % by weight for wood.” 			

¹⁹ EEA, Municipal waste management reports. March 2013

EU Directive	Packaging and Packaging Waste Directive (94/62/EC)	Article	6					
Reporting requirement								
Annual report of:								
1. For primary, secondary and tertiary packaging:								
(a) quantities, for each broad category of material, of packaging consumed within the country (produced + imported - exported);								
(b) quantities reused.								
2. For household and non-household packaging waste:								
(a) quantities for each broad category of material, recovered and disposed of within the country (produced + imported - exported);								
(b) quantities recycled and quantities recovered for each broad category of material								
UK targets								
Following a consultation in 2012, the UK set the following the target for packaging recycling and recovery for the period 2013 to 2017:								
Material	2012 (%)	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	Directive requirement	UK 2011 achievement
Paper/card	69.5	69.5	69.5	69.5	69.5	69.5	Minimum 60%	84.8%
Glass	81	81	81	81	81	81	Minimum 60%	63.9%
% by re-melt	-	63	63	63	64	64		
Aluminium	40	43	46	49	52	55	Minimum 50%	45.8% (55.3%)
Steel	71	72	73	74	75	76		57.6%
Plastic	32	37	42	47	52	57	Minimum 22.5%	24.2%
Wood	22	22	22	22	22	22	Minimum 15%	58.7%
Total recovery	74	75	76	77	78	79	Minimum 60%	67.1%
Of which recycling	68.1	69	69.9	70.8	71.8	72.7	55% - 80%	60.8%
It should be noted that these targets only apply to companies which have obligations under the Producer Responsibility Obligations (Packaging Waste) Regulations. For companies to be obligated they must have a £2 million annual turnover and handle more than 50 tonnes of packaging a year. Therefore the UK overall level of recycling and recovery will be lower than the targets set under the Regulations. However the levels set in the Regulations have been designed to ensure that EU targets are achieved by the obligated companies.								
Potential Changes to Existing Targets Implications								
Remove the 80% upper limit on the recycling of packaging waste target	UK practices		The Packaging Waste Regulations do not set an upper limit on recycling.					
	Implications/ issues		As no upper limit is set there is no implication, implications could arise if the lower limit was to be increased.					
	Data requirements		No change to the data requirements					
	Data capture		No change					
Removing the recovery element of the target and setting the 60% minimum target on recycling only.	UK practices		Currently the incineration of waste with energy recovery is considered as a recovery operation and the incineration of packaging, in such facilities, counts towards the recovery element of the packaging waste target. The level of packaging deemed as being recovered depends on the waste stream being incinerated. For municipal waste, 23% ²⁰ of the input is deemed to be packaging and hence recovered. For clinical waste the figure is 6% of the total weight of the clinical waste and for other waste streams the packaging content is agreed with the appropriate agency based on sampling.					

²⁰ National Waste Packaging Protocol for Energy from Waste – actual document could not be found but is quoted on “Form Guidance ACC-GN01: How to apply for an accreditation to reprocess or export UK waste packaging” July 2012

EU Directive	Packaging and Packaging Waste Directive (94/62/EC)	Article	6
	Implications/ issues	<p>In 2011, the UK achieved a total packaging waste recovery rate of 67.1% and a packaging waste recycling rate of 60.8%. Therefore the EU targets for recovery and recycling would have been achieved even if recovery was excluded.</p> <p>Since 2011 there is no published figure for the total packaging waste arising to compare packaging recovery and recycling against. If the 2011 packaging waste arising²¹ (10,929,657 tonnes) is used to estimate the performance in 2012 and 2013 using data from National Packaging Waste Database²², the following recovery/recycling rate would have been achieved:</p> <ul style="list-style-type: none"> - 2012: <ul style="list-style-type: none"> o 6.544million tonnes recycled, equivalent to 59.9% recycling o 7.365million tonnes recovered, equivalent to 67.4% recovery - 2013: <ul style="list-style-type: none"> o 7.115million tonnes recycled, equivalent to 65.1% recycling o 7.954 million tonnes recovered, equivalent to 72.8% recovery <p>The figures suggest that EU targets for recovery and recycling would still be achieved even if recovery was excluded.</p> <p>As highlighted earlier under the Waste Framework Directive, if a distinction were to be made between “recycling” and “other recovery” for glass based on its end destination, there could be a notable reduction in the amount of glass packaging deemed to be recycled.</p> <p>In 2012, 1.466million tonnes of glass packaging were recycled of which 0.892million tonnes were through re-melt and 0.574million tonnes through other methods. If only the material set for re-melt was deemed to be recycling the packaging recycling rate would reduce to 59.9%.</p> <p>In terms of the material specific target for glass of 60%, if only re-melt is included as recycling it is likely that the 60% target would not be achieved.</p>	
	Data requirements	No change to the data requirements	
	Data capture	No change	

Potential Changes Beyond 2020

Future requirements and targets could look to:

- Increase the material specific targets from their current levels. This could potentially include setting a target of 60% for each material, which could prove challenging for plastics in the UK given the current levels being achieved.
- Specific targets for recovering packaging from households and making the segregation of packaging mandatory. While potentially some implications for the UK, most packaging is targeted by local authority collections with the exception of certain plastic packaging e.g. plastic film and wooden packaging (although there is limited wood packaging in the household waste stream and it can be captured at Household Waste Recycling Centres).

²¹ <https://www.gov.uk/government/policies/reducing-and-managing-waste/supporting-pages/packaging-waste-producer-responsibility-regimes>

²² <http://npwd.environment-agency.gov.uk/Public/PublicReports.aspx>