

Draft

**Guidance on the interpretation
of key provisions of
Directive 2008/98/EC on waste**

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This document contains non-binding guidance to Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3), also known as the Waste Framework Directive or WFD. For ease of reading, the acronym “WFD” is used throughout this document for all references to Directive 2008/98/EC.

In the document, the European legislation in force at the time of writing is taken as the basis. Annex 1 contains a reference to the date of adoption of all cited legal acts, the source within the OJ and a link to the corresponding entry at the EurLex web site. Note that the legal acts may have since been amended or repealed. Respective information can be found in the EurLex entries to the acts under the section “Relationship between documents”; consolidated versions of the acts can be found at http://eur-lex.europa.eu/RECH_consolidated.do

The Court of Justice of the European Union is in all cases referred to as CJEU, even if the ruling occurred when the official name of the Court was different. Annex 2 contains a reference to the date, the case number and a link to the corresponding entry at the EurLex web site. Note that additional material on case law can be found at the CJEU’s official web site <http://curia.europa.eu/>

1 Definitions

1.1 Definition of waste

1.1.1 Subject and background

The definition of waste is one of the key concepts of the WFD (see recital 8 WFD). It determines what materials fall under the Directive's scope. The WFD concept of waste significantly affects the EU approach towards waste management. For example, only transfrontier movements of waste as defined in the WFD are subject to the strict procedural requirements of the EU Waste Shipment Regulation (EC) No 1013/2006.

By way of exclusion, the definition is also crucial in that it clarifies which substances or objects are not waste through not meeting the criteria set in the definition. For example, Article 2(2) of REACH Regulation stipulates that REACH does not apply to waste in the sense of the WFD.¹ Thus, waste in the sense of the WFD definition is explicitly and specifically excluded from REACH requirements.⁰

1.1.2 What is the definition of waste within the new WFD, and what has changed?

The new WFD defines waste as *“any substance or object which the holder discards or intends or is required to discard”*.

The terms *“substance”* and *“object”* are not to be understood in the sense of EU chemicals legislation, but as autonomous terms of waste legislation which are to be understood broadly, making clear that the concept of waste is not restricted to the shape of the object.

The definition of waste itself has not been modified compared to previous legislation (Directive 2006/12/EC). The hitherto case law by the CJEU with respect to the term *“waste”* – the CJEU had reason to clarify and give interpretation to the concept of waste on several occasions (see references below in this chapter) is fully applicable under the new legislation. In two key areas, however, the legislator has sharpened the concept of waste by introducing requirements

- under which conditions by-products (usable production) are not subject to waste management (see below chapter 1.2) and
- under which conditions material recovered from waste ceases to be waste (end-of-waste-criteria, see below chapter 1.3.)

¹ REACH Regulation makes reference to waste in the sense of Directive 2006/12/EC. According to Article 41 and Annex V to the WFD, such references have to be understood as references to the WFD.

not legally binding

Both the concepts “by-product” and “end-of-waste” introduce a distinction between waste and non-waste.

1.1.2.1 Key term “discard”

The key term of the waste definition is “discard”, used in three alternatives (“any substance or object (1) which the holder discards or (2) intends or (3) is required to discard”), without providing definitions or clarification on the exact understanding of these.

However, the first alternative is describing an action or activity of the holder of the substance or the object, the second describes an intention of the holder, and the third a legal obligation (see examples below). These three alternatives are not always easy to distinguish. Regarding the second alternative (*intention to discard*), note that the CJEU has recognised that the holder’s intention is to be inferred from his/her actions in the light of the aims of the WFD and having regard to factors provided by the Court.

Note that each of the three alternatives is related to the conduct of the holder and not to the characteristics of the substance or object. Consequently, the polluting potential of a material, or lack thereof, does not have an effect on whether it is a waste or not.²

For a number of every-day situations, the allocation of a holder’s actions and activities to one of the three “discarding” alternatives and thus the classification of a substance or object as a waste is an easy task. For example, an item thrown in a dustbin is discarded, and is thus considered waste. On the other hand, for a number of cases and in a very wide range of circumstances, there remains uncertainty.

The CJEU has recognised a need for flexibility in adopting a case-by-case approach as well as a need for consideration of all specific factual circumstances involved. Furthermore, the Court has held that in view of the aims and objectives pursued by the WFD, the concept of waste cannot be interpreted restrictively.³

The following clarifications regarding the concept of discarding were provided by the CJEU:

- Discard applies to both recovery and disposal. However, it should be noted this does not mean any substance which undergoes a recovery/disposal operation as listed in the WFD Annexes is waste per se, but it might be seen as evidence for being waste⁴;
- Discard can involve a positive, neutral, or negative commercial value. No distinction is made based on whether the substance/object is marketable or not⁵;

² Case C-9/00 *Palin Granit Oy* (2002), para 50.

³ Joined cases C-418/97 and C-419/97 *ARCO* (2000), paras 36 et seqq; Case C-252/05 *Thames Water* (2007) para 28; Case C-188/07 *Commune de Mesquer* (2008), para 39, 44.

⁴ Joined cases C-418/97 and C-419/97 *ARCO* (2000), para 51; Case C-9/00 *Palin Granit Oy* (2002), para 27.

⁵ Joined cases C-206/88 and C-207/88 *Vessoso and Zanetti* (1997), para 9.

- Discard can be intentional/deliberate on the part of the holder or unintentional/involuntary/accidental⁶ or even can occur with or without the awareness of the holder⁷;
- The location of storage of a material does not have an effect on whether it is a waste or not⁸

1.1.2.2 *Practical examples for the three alternatives of “discarding”*

Discard

- An item is thrown into a waste bin.
- A company transfers material to a waste collector.
- A person deposits clothing at a clothing collection point in a civic amenity site. This is considered to be waste since the clothing is discarded.

Intention to discard

- In its decommissioning plan in the event of future closure, an operating site indicates that it will send any of its stock of raw materials that cannot be returned off-site for appropriate disposal or recovery.
- The holder of leftover stone resulting from stone quarrying which was stored for an indefinite length of time to await possible use discards or intends to discard that leftover stone”.⁹

Requirement to discard

- Any oil containing PCBs above 50 ppm is required to be discarded following the requirements of EU PCB/PCT Directive 96/59/EC and is therefore to be considered waste;
- Stockpiles of pesticides, which are prohibited from use, are required to be discarded and therefore to be managed as waste.

1.1.2.3 *Practical examples of waste and non-waste*

The following are examples of a substance/object not being a waste:

⁶ Case C-252/05 Thames Water (2007) para 28.

⁷ Case C-1/03 van de Walle (2004) paras 46 et seqq.

⁸ Case C-9/00 Palin Granit Oy (2002), para 28/29.

⁹ Case C-9/00 Palin Granit Oy (2002), para 39.

Example 1 – Clothing, for which a person no longer has a use, is taken to a charity shop with the intention that it should continue to be used for its original purpose. Counter-example: A bag of mixed clothing taken to a civic amenity site. This is regarded as being discarded because only a part of the collected clothing will be re-used, and at the point of collection it is not clear which part.

Example 2 – Refillable bottles to be collected, cleaned and refilled by the manufacturer are not discarded.

1.1.2.4 *Would oil spills in the marine environment have to be considered as waste?*

The question as to whether oil spills in the marine environment would have to be considered waste became of practical relevance on the occasion of damage caused by heavy fuel oil spread on the territory of the Commune de Mesquer (Brittany) following the sinking of the oil tanker Erika on 12 December 1999. The question became relevant once more for the EU in the context of lessons learned from an oil spill due to an accident during offshore drilling in the Gulf of Mexico in early 2010.

The Court, in its judgement C-188/07 of 24 June 2008 (Commune de Mesquer), found that hydrocarbons accidentally spilled at sea following a shipwreck, mixed with water and sediment, and drifting along the coast of a Member State until being washed up on that coast, constitute waste within the meaning of Article 1(a) of Directive 75/442 as amended, where they are no longer capable of being exploited or marketed without prior processing.

In interpreting this judgement it appears evident that any accidentally spilled hydrocarbons at sea, under circumstances where they are no longer capable of being exploited or marketed without prior processing, would have to be considered as waste. This would also account for any oil spills from offshore drilling. Therefore, their further treatment, storage, or processing, would then have to satisfy waste legislation. According to the polluter-pays principle, the costs of the management of such waste shall be borne by the original waste producer or by the current or previous holder.

1.1.3 What is the relationship between the definition of waste and the List of Waste?

Article 7 of the WFD clarifies that just because a substance or object appears on the List of Waste Decision 2000/532/EC, does not mean it is a waste in all circumstances. It is a waste only where the definition “any substance or object which the holder discards or intends or is required to discard” is met.

1.2 The concept of “by-product”

1.2.1 Subject and background

The CJEU, through a number of rulings, has given guidance on when a material can be regarded as something which an undertaking wishes to exploit rather than a substance or product which is being discarded. The new WFD does not change these legal conditions in substance, but has codified them in Art 5 to improve legal certainty and has introduced in Art 5(2) a mandate for the Commission to determine technical criteria for certain materials based on these legal conditions.

For the purposes of this Guidance Document the following illustrative terms are used:

- Product – all material that is deliberately created in a production process. In many cases it is possible to identify one (or more) “primary” products, which is the principal material(s) produced
- Production residue – a material that is not deliberately produced in a production process but may or may not be a waste.

A production residue that fulfils the requirements of Article 5 WFD is a by-product and not waste.

1.2.2 Is the material concerned a production residue or a product?

A production residue is something other than the end product that the manufacturing process directly seeks to produce.¹⁰ Where the production of the material concerned is “*the result of a technical choice*”, it cannot be a production residue.¹¹ Therefore, the first question to be asked when determining whether a material is waste or not is: Does the manufacturer deliberately choose to produce the material in question?

If the manufacturer could have produced the primary product without producing the material concerned but chose to do so, this is evidence that the material concerned is a product and not a production residue. Also a modification of the production process in order to give the material concerned specific technical characteristics could indicate that the production of the material concerned was a technical choice.

1.2.3 Conditions where a production residue is a by-product and not waste

Article 5(1) WFD sets out the following four requirements that a production residue must meet in order to be considered a by-product:

¹⁰ Case C-9/00 *Palin Granit Oy* (2002), para 32.

¹¹ Case C-235/02 *Saetti* (2004), para 45.

- a) further use of the substance or object is certain;
- b) the substance or object can be used directly without any further processing other than normal industrial practice;
- c) the substance or object is produced as an integral part of a production process; and
- d) further use is lawful, i.e. the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

It should be noted that these tests are cumulative, and all four conditions must be met. The origin and meaning of the criteria are discussed in the following sections.

It should also be noted that, whether a material is waste must be determined in the light of all circumstances, duly taking into account the aim of the Directive.

The interpretation of these conditions is facilitated by explaining the CJEU rulings from which they are derived.

1.2.4 What is meant by “further use is certain”?

“Further use is certain” means that it is not a mere possibility, but a certainty or it is guaranteed that the material will be used. The purpose of this criterion is that, if further use is not certain, there is the risk that the material would be disposed of as waste.

In the CJEU *Palin Granit* ruling: *“the holder of leftover stone resulting from stone quarrying which is stored for an indefinite length of time to await possible use discards or intends to discard that leftover stone, which is accordingly to be classified as waste within the meaning of Directive 75/442”*.

In this case it can be seen that, as the holder is storing the material in question for an indefinite time period, further use is not certain.

The other side of this argument is shown in the *AvestaPolarit* case¹², where the ruling found that some of the left-over rock from a mining operation could be classified as a by-product where the holder used it for the necessary back-filling of the mine and provided guarantees in relation to the identification and actual use of the leftover rock for that purpose. Similarly, in the *Saetti* case¹³, certainty of use of the coke production in its entirety and for the same purposes as the refinery products, contributed to the material not being considered a waste. Another case considering the

¹² Case C-114/01 *Avesta Polarit* (2003).

¹³ Case C-235/02 *Saetti* (2004).

“certainty of use” criterion is the *Spanish Manure* case¹⁴ where the ruling held that it is possible for a substance to be regarded as not being waste if it is certain to be used to meet the needs of economic operators other than that which produced it.

Certainty of further use, of course, is virtually impossible to prove definitively in advance. However, “further use is certain” may be indicated through, for example:

- Existence of contracts between the waste holder and subsequent user.
- A financial gain for the waste holder.
- A solid market existing for this further use.

(Note that the above mentioned criteria provide guidance for competent authorities as to what might indicate that the criterion “*further use is certain*” is being met; they are *not* in themselves additional criteria). As always, the specific factual circumstances of the case must be considered.

The following *may* indicate that future use is uncertain:

- There is no market for the material;
- The material is not usable in its current form;
- Only part of the material is to be used with the rest to be disposed of (should be initially treated as waste);
- The financial gain for the waste holder is nominal compared to the costs of waste treatment;
- Storage is to be for an indefinite amount of time.

1.2.5 What is meant by “used directly without any further processing other than normal industrial practice”?

If a production residue has to be treated before it can be used, this is usually regarded as a waste treatment operation. Therefore the CJEU, stressed in its rulings on the waste definition that a production residue can only be regarded as a by-product, if its further use is certain without prior processing¹⁵. On the other hand it has to be considered that primary raw materials usually also require some processing before they can be used in production processes. Only those treatment techniques that address typical waste related characteristics of the production residue, such as contamination of the material with components which are hazardous or not useful, will prevent

¹⁴ Case C-121/03 *Manure* case (2005).

¹⁵ e. g. Case C-194/05 *Commission v Italy* (2007), para 39.

classification as non-waste. A treatment which is normal industrial practice, e.g. modification of size or shape by mechanical treatment, does not prevent the production residue from being regarded as a by-product. However, treatment where the residue is separated from non-useful components or hazardous compounds is usually considered to be waste treatment. This is to ensure that such operations, which might pose risks to the environment or human health, are monitored under waste management law in accordance with the precautionary principle.

The CJEU ruling for the *Palin Granit* case found that, where the leftover rock was put to alternative use, but where some processing was required in such instances prior to being put to this use; the rock was classified as waste. On the other hand where the leftover rock was used directly for backfilling the mine it was not considered waste.

Concerning production residues, the CJEU found in the *Niselli*¹⁶ case that “waste” must not be understood as excluding

“all production residues which can be or are reused in a cycle of production, either without prior treatment and without harm to the environment, or after undergoing prior treatment without, however, requiring a recovery operation listed under the WFD.”

In meeting the criterion of being “*used directly without any further processing other than normal industrial practice*”, the crucial point is to determine what “normal industrial practice” is. The following can be considered by the competent authority:

- Normal industrial practice can include tasks such as being washed, dried, refined, homogenised, adding materials necessary for further use; modifying characteristics necessary for further use; being quality controlled.
- The degree of readiness of the material for further use can be considered.
- Some of such tasks can be carried out on the site of the manufacturer, some on the site of the next user, and some by intermediaries, as long as they also meet the criterion of being “produced as an integral part of a production process”.
- No conclusion is to be drawn when a task that is ‘normal industrial practice’ for producing a particular product (e.g. crushing and grading of virgin quarried material for aggregates) but is also often used as a waste recovery operation (e.g. crushing and grading of C&D mineral waste to produce aggregates), or is a listed waste recovery operation in the Annex II to the WFD. This would be relevant to a number of operations like washing, refining, etc.

¹⁶ Case C-457/02, *Niselli* (2004).

Box 1: Example of wastes and non wastes: Slags and dusts from iron and steel production¹⁷

Blast furnace slag is produced in parallel with hot iron in a blast furnace. The production process of the iron is adapted to ensure that the slag has the requisite technical qualities. A technical choice is made at the start of the production process that determines the type of slag that is produced. Moreover, use of the slag is certain in a number of clearly defined end uses, and if evidence for a demand can be provided. Blast furnace slag can be used directly at the end of the production process, without further processing that is not an integral part of this production process (such as crushing to get the appropriate particle size). This material can therefore be considered to fall outside of the definition of waste.

In contrast, de-sulphurisation slag is produced due to the need to remove sulphur prior to the processing of iron into steel. The resulting slag is rich in sulphur, cannot be used or recycled in the metallurgical circuit and is therefore usually disposed of in a landfill. Another type of example is dust extracted from the steel production process when cleaning the air inside the plant. This is captured in filters via an extraction process. These filters can be cleaned and the metallic content returned to the economic cycle via a recycling operation. Both of these production residues are therefore wastes from the point of production with the iron content extracted from the filters ceasing to be waste once it has been recycled.

1.2.6 What is meant by “produced as an integral part of a production process”?

According to the CJEU rulings a condition of a by-product is whether its *use* forms an integral part of a process of *production or use*.¹⁸ The wording in Article 5 (1) lit. (c) WFD sets this precondition slightly different by requiring that the substance or object “*is produced*” as an integral part of a production process. It can be taken from this that the process where the by-product is *generated* has to be an integral part of a production process. Therefore a material, which is made ready for further use through an integral part of a production process, can be regarded as a by-product. If a material leaves the site or factory where it is produced in order to undergo further processing, this may be evidence that such tasks are no longer part of the same production process.

However, Article 5(1) lit. (b) WFD has to also be taken into account: further treatment operations which are normal industrial practice do not exclude the classification of a production residue as a by-product, regardless as to where such industrial treatment is carried out – on the site of the generator of the material, on the site of the industrial facility using the material, or on an intermediate site.

The following points can be considered by competent authorities in determining in a particular case if a substance or object is “*produced as an integral part of a production process*”:

- What is the nature and extent of the tasks needed to prepare the material for further use? How integrated are these tasks in the main production process?
- Are the tasks that are undertaken as part of “*normal industrial practice*”, also “*an integral*”

¹⁷ Example taken from European Commission, Communication to the Council and the European Parliament on the Interpretative Communication on waste and by-products (2007).

¹⁸ Case C-194/05 Commission v Italy (2007), paras 38 and 46.

part of a production process”? The relevant BREF might be taken into consideration.

There is a need to define the scope of a production process. This is not necessarily an easy task as the examples below illustrate.

- Flue gas desulphurisation facilities remove sulphur from the flue gases that are produced when sulphurous fossil fuels are combusted in power plants, in order to prevent these emissions contributing to air pollution and acid rain. The resulting material, flue gas desulphurisation (FGD) gypsum has the same range of uses as natural gypsum, notably the production of plasterboard. The process is modified and controlled to produce FGD gypsum with the required characteristics. The generation of gypsum from the residues from flue gas cleaning on the site of the power plant can be regarded as an integral part of a production process (energy generation).

1.2.7 What is meant by “further use is lawful”?

The use of a by-product being considered lawful has arisen in the *AvestaPolarit*¹⁹ case where the leftover rock was classified as a by-product where the holder uses it **lawfully** for the necessary filling in of the mine. In the *Spanish Manure* case, the use of livestock effluent may fall outside classification as waste if it is used as a soil fertiliser as part of a **lawful** practice of spreading on clearly identified parcels.

Article 5(1) lit. (d) WFD clarifies that the further use of is lawful“, i.e. the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts”.

Compliance with relevant product, environmental and health protection requirements for the specific use can be relatively easy assessed. It *may be* indicated through, for example:

- A material meeting the technical specifications relevant to its further use, or an object meeting product specifications relevant to its further use. An example is organic solvent purity specifications in accordance with its use in manufacturing under food and drug legislation.
- If there are no relevant technical specifications for the material, it can still be lawful to use it simply if its use is not specifically forbidden.

The following indicates that further use is unlawful:

- The material does not meet the technical specifications, or an object does not meet the product specifications required for it to be usable. An example is stone or gravel that does

¹⁹ Case C-114/01 *Avesta Polarit* (2003).

not meet the technical specifications associated with the use of such material for road construction.

- The material is banned from use or the material must be disposed of or recovered as waste by certain obligatory methods. Examples are transformers containing PCBs in oil at levels greater than 50 ppm or wastes containing persistent organic pollutants which have to be treated according to Article 7 of POP Regulation (EC) No 850/2004.

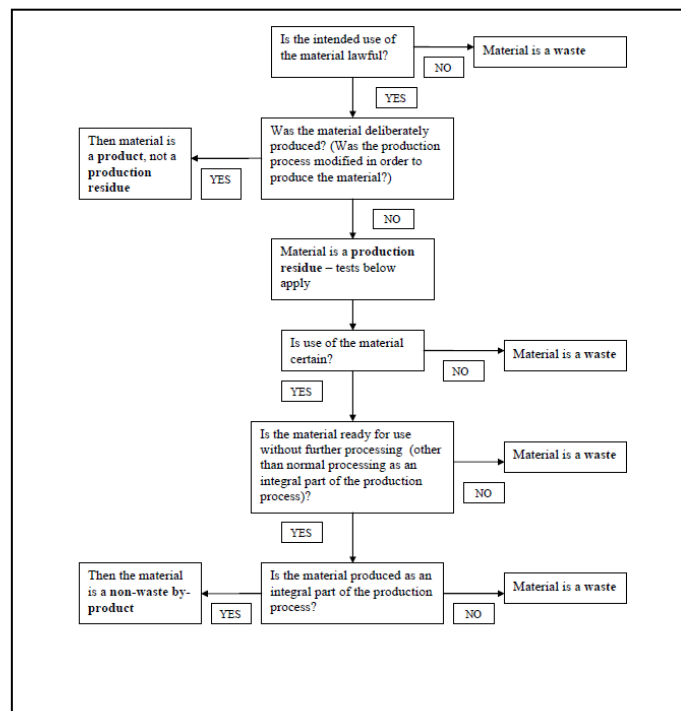
However, Article 5(1) lit. (d) WFD also requires an assessment to confirm the use of the production residue does not lead to overall adverse environmental or human health impacts. It also has to be taken into account that the use of primary raw materials might result in certain environmental or health risks. An indication might be taken from an assessment as to whether using and treating the production residue under the provisions of waste legislation would prevent adverse effects on the environment and human health.

1.2.8 How is it determined whether or not a material is a “by-product”?

Whether a material is a “by-product” or a “waste” has to be decided on a case-by-case basis by the competent authority in the Member State.

A decision tree is shown in the following figure for determining if a material is a by-product:

Figure 1: Decision tree on determining whether a material is a by-product²⁰



²⁰ Taken from European Commission, Communication to the Council and the European Parliament on the Interpretative Communication on waste and by-products (2007).

1.2.9 Development of by-product criteria at EU level

There is a mandate for the Commission under the WFD to define “by-product” criteria for specific substances or objects through comitology procedure.

1.2.10 What is the relationship between achieving “by-product” status and REACH legislation?

An object considered by-product under the WFD is in principle subject to REACH Regulation (EC) 1907/2006 since the exclusion of Article 2(2) REACH do apply to “waste” only. All REACH requirements (e.g. obligations for registration and communication) have to be fulfilled where applicable.

It should be noted that Annex V of REACH Regulation No 1907/2006 does recognise “by-products”. However, this term is not used in the sense as “by-products” under the WFD.

1.3 The concept of “End-of-waste”

1.3.1 Subject and background

The WFD introduces end-of-waste as a new concept, indicating under which circumstances material which already meets the waste definition, and thus has been subject to waste management legislation, achieves a status whereby it ceases to be a waste. Such a material would no longer be governed by waste legislation – e.g. waste permit requirements, waste shipment requirements, etc.; in essence the material becomes a product.

The concept of end-of-waste (EoW) has been incorporated into the WFD to further encourage recycling in the EU by setting quality criteria for recyclates, creating legal certainty and a level playing field as well as removing unnecessary administrative burden. The approach of the WFD is that waste ceases to be waste when it has undergone a recovery process leading to a useful and safe product that can be placed on the market, in conformity with criteria set at EU or at Member State level.

1.3.2 How will “end-of-waste” status be achieved?

According to Article 6(1) lit. (a) to (d) WFD, a waste material having undergone a recovery operation ceases to be waste when the specific conditions mentioned below are met. The recovery operation

can be any operation covered by the definition in Article 3(15) WFD, i.e. any operation the principle result of which is waste serving a useful purpose by substituting other materials, or waste being prepared to fulfil that function. It may even be as simple as just checking the waste to verify that it fulfils the EoW criteria (see Recital 22 WFD). The specific criteria the material has to meet are:

a) *the substance or object is commonly used for specific purposes;*

b) *a market or demand exists for such a substance or object;*

- These first two conditions are related. Compliance with these two criteria can be indicated by:

- The existence of trade between the material supplier and the user.

- A verifiable market price being paid for the material.

- The existence of specifications or standards for trading.

c) *the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products;*

- Compliance with this criterion can be indicated e.g. by compliance with any relevant technical specifications or technical standards that are used for virgin materials for the same purpose. The material should be ready for final use and no more waste treatment steps should be needed. For further considerations see the European Commission's Joint Research Centre (JRC) document on the methodology for setting EoW criteria.²¹

d) *the use of the substance or object will not lead to overall adverse environmental or human health impacts.*

- Compliance with this criterion can be indicated by comparing the use of the material under the relevant product legislation to the use of the same under waste legislation, including specific legislative acts, such as the Waste Shipment Regulation or the specific requirements of the Directive on Waste Incineration. Is the product legislation sufficient to control the environmental or human health impacts? Would releasing the material from the waste regime lead to higher environmental or health risks?

See the named JRC document for further considerations. By setting end-of-waste criteria the authorities have to ensure a high level of environmental protection (see Recital 22 WFD). Releasing recovered materials from the scope of waste legislation should not weaken environmental or health

²¹ European Commission, End of Waste Criteria, Final Report (2008), available at <http://susproc.jrc.ec.europa.eu/documents/Endofwastecriteriafinal.pdf>.

protection.

1.3.3 How can “end-of-waste” criteria be set?

Article 6 WFD lists two cases in which EoW criteria can be set:

- At EU level, EoW criteria for certain materials may be adopted by comitology procedure (Article 6(1) and (2) WFD), with at least the following waste streams to be considered: aggregates, paper, glass, metal, tyres and textiles (Article 6(2) WFD)
- At Member State level, as far as standards have not been set at EU level (Article 6(4) WFD). This can relate to classes of materials recovered from waste or to single case decisions. Member States (this means, any level within the Member State which has the task of developing such criteria according to national administrative structure) are bound by, and must fully satisfy CJEU case law. The notification requirements in accordance with Directive 98/34/EC have to be observed. Any draft technical regulations by Member States on end-of-waste criteria have to be notified and will be checked by the Commission as regards compliance with Article 6(1) WFD. This includes de-facto technical regulations, such as administrative provisions or voluntary agreements (for details see Article 1 Directive 98/34/EC). Single-case decisions do not have to be notified, even though they may be based on general administrative provisions for which notification is mandatory.

Once end-of-waste criteria are set at Community level, these are binding for Member States. If they have been set as an EU Regulation, they are also binding for stakeholders. Member States cannot apply different end-of-waste criteria for the same material. However, since the WFD is based on Article 175 of the Treaty, they may establish “more stringent protective measures”.

1.3.4 Practical example: EoW for Iron and Steel scrap

On 31 March 2011, Council Regulation (EU) No 333/2011 has been adopted containing EoW criteria for iron and steel scrap. The document entered into force in April 2011. It contains specified requirements in relation to product quality, input materials, processes and techniques being used, together with documentation and quality control to support all of this.

The Regulation sets out criteria when Iron and steel scrap and aluminium scrap (including aluminium alloy scrap) cease to be waste. The requirements concern both the input and the output of the recovery process. The producer or importer of waste which has ceased to be waste has to issue, a statement of conformity accordance with a model set out in Annex III of the Regulation.

1.3.5 At what point in the chain will “end-of-waste” status be achieved and demonstrated?

EoW status for a material that meets all of the associated EU level criteria will be achieved at the

point of transfer to another person, provided that the holder of the material, who is putting it on the market for the first time as non-waste material, provides evidence that the end-of-waste criteria have been met. A quality management system has to be applied to ensure consistent compliance with the criteria and a statement of conformity with the criteria has to be issued for each consignment. At this point the material is no longer a waste. For example, in Council Regulation (EU) No 333/2011 on EoW criteria for scrap metal, the transfer of possession from one holder (the “producer” of end-of-waste material) to another holder is a legal condition for end-of-waste.

Note that it is the material producer, i.e. the person who first transfers the material to another person as non-waste, who is responsible for providing evidence that EoW criteria have been fulfilled via the statement of conformity.

1.3.6 How will the application of “end-of-waste” criteria affect recycling targets?

According to Article 6(3) WFD, the EoW status is extended for the purpose of counting recycling and recovery targets under specific waste stream Directives.

A recovered material which ceases to be waste should in principle count towards recovery targets, unless there are any specific requirements in the waste stream related Directives which would require further monitoring. However, this will not affect the achievement of recycling targets of the waste stream related directives since these are usually measured at the point of generation or collection, as the example below illustrates.

1.3.7 Will the concept of “end-of-waste” mean that reprocessing facilities are no longer classed as recycling facilities?

According to its definition in Article 3(17) WFD recycling is the reprocessing of waste. If a reprocessing facility (such as steel works) only receives material certified as fulfilling EoW criteria, its activity is not a recycling or a recovery process, but a production process for producing a product.

1.3.8 How will the application of “end-of-waste” criteria affect imported material?

For material imported into the EU for which EoW status is claimed, the importer (i.e. the first person within the EU who introduces the material to the EU territory) has to demonstrate EoW status for each consignment by issuing a statement of conformity.

1.3.9 What is the relationship between the application of “end-of-waste” criteria and REACH legislation?

For a material that achieves end-of-waste status the associated producer of this material, i.e. the person who places the material on the market for the first time after it ceases being waste, must ensure that the material meets any relevant requirements under REACH Regulation (EC) 1907/2006 and CLP Regulation (EC) 1272/2008. Recovered substances from waste are exempted from

registration obligations under REACH Regulation if the conditions of Article 2(7) lit. (d) REACH Regulation are met. However, the obligation to communicate information in the supply chain under REACH applies without restrictions. Further information is given in a guidance document published by the European Chemicals Agency (ECHA).²²

1.4 Definitions of waste prevention and of waste management options

1.4.1 Subject and background

In the following chapter, definitions relevant to the waste hierarchy are presented. It should be stressed that clear definitions are crucial for the distinction between the levels of the waste hierarchy and that lack of clarity leads to weak implementation of the hierarchy (see below chapter 3).

1.4.2 What is meant by “waste prevention“?

Waste “prevention” is defined by Article 3(12) WFD as follows:

“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“.*

Whereas reducing the amounts of waste is called quantitative waste prevention, reducing the content of harmful substances in materials and products is termed qualitative waste prevention.

Technically, “prevention” is not a waste management measure because it pertains to substances or objects before they become waste. Consequently, obligations under waste management legislation (permitting and registration; inspection; requirements for transfrontier shipments) do not apply.

Examples of waste prevention measures are laid down in Annex IV to the WFD.

²² European Chemicals Agency, Guidance on waste and recovered substances, Version 2 (May 2010), available at http://guidance.echa.europa.eu/docs/guidance_document/waste_recovered_en.pdf.

Table 1-1: Examples for waste prevention measures

Examples for waste prevention measures from Member States as defined in Annex IV
Awareness to business: Online information portals on resource efficient production (including energy efficiency) which are financed by competent authorities. The platform addresses specific production processes and provides case studies and scientific analyses for material savings
Voluntary agreements with consumer/ producer/ business/ industry: to achieve indicators and targets in resource efficiency, reuse of products etc.
Environmental Management Systems (EMAS, ISO 14001), e.g. introduction of regional or national programmes for the promotion of EMAS to encourage both public and private organisations to improve their overall environmental performance by, inter alia, increasing waste prevention and improving resource efficiency methodically
Economic instruments which can be realised by the introduction of incentives, taxes, deposits and obligatory payments. This may for example include the introduction of a carbon tax on packaging.
Awareness and information campaigns addressing the public which may be carried out on local, regional and national level addressing different target groups and preferably priority waste streams of a Member States (e.g. food waste, textile waste, C&D waste...)
Ecolabelling of products which are environmentally friendly, e.g. because of material and energy efficient production, containing no hazardous substances etc.
Substitution of hazardous substances in products by environmental friendly substances to reduce the hazardousness of products and waste
Establishment of leasing systems (e.g. for cars, high-tech office equipment etc.)
Promotion of re-use by establishment of re-use centres, online re-use platforms and repair networks for household goods; subsidisation of second hand shops

1.4.3 What is meant by “reuse”?

In Article 3(13) of WFD, the following definition of “re-use” is laid down: “Any operation by which products or components that are not waste are used again for the same purpose for which they were conceived”. Re-use is a means of waste prevention; it is not a waste management measure. Hence reuse is closely linked to the definition of waste and the notion of discarding. If a person is taking

over a material directly from the current owner with the intention of reusing it either for the same or another purpose, this gives evidence that the material is not a waste. This may in certain cases even involve the necessity of performing some repair activities.

1.4.4 What is meant by “recovery“?

The definition and understanding of “recovery” is one of the key concepts of the WFD. “Recovery” and the opposite term “disposal” (negatively defined as operations which are not recovery, see below chapter 1.4.8) form together “waste treatment” (see Article 3(14) WFD). Any waste treatment is only either a recovery operation or a disposal operation; the CJEU has explicitly stated that no operation can be classified as disposal and recovery at the same time²³

The classification of an operation has significant consequences not just for adherence to the waste hierarchy (see below chapter 3), but for entire waste management decisions. For example, in the context of transfrontier shipments of waste under the Waste Shipment Regulation, the question as to whether the final operation is disposal or recovery may determine the applicable procedure and the possibilities for national competent authorities to raise objections.

Article 3(15) WFD newly introduces a definition for recovery: *“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.”*

This definition takes into account the CJEU case law where the approach of substitution as a precondition for recovery was developed in the rulings *ASA*²⁴ and *Cement kiln*.²⁵

The definition of recovery comprises of the three sub-categories preparing for re-use (see chapter 1.4.5), recycling (see chapter 1.4.6), and other recovery (see chapter 1.4.7).

The fact that the waste has to serve a useful purpose *“as a principal result”* of the recovery operation is an important aspect in distinguishing recovery from disposal operations.

The CJEU has stated with respect to incineration of waste in cement kilns that *“it follows from the term principally used (...) that the waste must be used principally as a fuel or other means of generating energy, which means that the greater part of the waste must be consumed during the operation and the greater part of the energy generated must be recovered and used.”*²⁶

The criterion was introduced to prevent misuse and sham recovery, incorporating the CJEU case law which refers to the “principal objective” of the operation.

²³ Case C-6/00 *ASA* (2002), para 63.

²⁴ Case C-6/00 *ASA* (2002).

²⁵ Case C-228/00 *Commission v Germany* (2002).

²⁶ Case C-228/00 *Commission v Germany* (2002), para 43.

According to the new recovery definition in the WFD the achieved substitution, which is crucial for waste recovery, can take place not just in the plant where the waste is being treated but also “in the wider economy”. This aims to facilitate the classification of waste incinerators with efficient energy generation as recovery operations.²⁷

It should be noted that according to the definition in Article 3(15) WFD not the actual production process where waste is substituting a primary raw material, but also processes upstream the material management chain where waste is being prepared to fulfil this function can be regarded as recovery operations.

Annex II to the WFD sets out a non-exhaustive list of recovery operations. An operation may be a recovery operation even if it is not listed, if it complies with the general definition of recovery

1.4.5 What is “preparing for re-use”?

The definition of “preparing for re-use” (Article 3(16)) is: *“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.”*

The key difference between “re-use” and “preparing for re-use” is that in the former case the material or object has not become a waste, whereas in the case of “preparing for re-use”, the material in question has become waste in the meaning of the waste definition (see above chapter 1.1; in particular the examples given under 1.1.2.3).

1.4.6 What is meant by “recycling”?

The definition of “recycling” under Article 3(17) WFD is: *“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.”*

The common idea behind recycling is that a material is processed in order to alter its physico-chemical properties allowing it to be used again for the same or other applications.

Specific waste management activities that are classed as recycling under the WFD include (but are not limited to):

- Recycling of materials: e.g. plastic products or components into plastic feedstock materials; re-melting waste glass into glass products; use of paper waste in paper-mills etc.

²⁷ In Case C-458/00 (Commission v Luxemburg), para 40 et seqq, the CJEU had still stated that in order to regard a waste incinerator as a recovery plant it should be demonstrated that the incinerator would use primary fuel, if suitable waste for energy generation was lacking.

- Production of compost that meets product quality criteria (for example, under standards to be developed).

It follows from the WFD recycling definition, that only the reprocessing of waste into products, materials or substances can be accepted as recycling. Processing of waste which results in a waste, which is then submitted to other waste recovery steps, would not be considered recycling, but pre-treatment prior to recovery. Such an operation would be categorised as “preparation prior to recovery or disposal” or “pre-processing” prior to recovery. The latter includes operations like dismantling, sorting, crushing, compacting, pelletising, drying, shredding, conditioning, repackaging, separating, blending or mixing prior to submission to any of the operations numbered R1 to R11.

For example, compost which does not meet end-of-waste quality criteria and is used as a fertiliser is being recovered (operation R10 in Annex II: “*land treatment resulting in benefit to agriculture or ecological improvement*”). Such operations are to be regarded as material recovery, but not as recycling. Similar, the biological reprocessing of waste in order to stabilise the waste before landfilling operations is to be classified as a pre-treatment prior to disposal and not as a recycling operation.

Under the waste hierarchy of Article 4(1) WFD (see below chapter 3) preference is given to recycling ahead of other forms of recovery (e.g., use as a fuel or backfilling).

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 (see for understanding of this term chapter 2.1).

1.4.7 What is meant by “other recovery”?

Other forms of recovery are not mentioned in the definition section, but in Article 4(1) WFD, where recycling is ranked above other forms of recovery. “Other recovery” is any operation meeting the definition for “recovery” under the WFD, but failing to comply with the specific requirements for preparation for re-use or for recycling.

Examples for other recovery are incineration with high energy recovery (for determining the classification of thermal treatment as R1 or D10 according to energy efficiency criteria, please consult the Commission’s Guidance Document) and backfilling operations.

1.4.8 What is meant by “disposal”?

Following Article 3(19) WFD, the definition of “disposal” is: “*any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy.*”

Out of this definition, it follows that any waste treatment operation which does not meet the criteria of the recovery definition, by default is considered to be disposal. The wording “*even where the*

operation has as a secondary consequence the reclamation of substances or energy” reflects inversely 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.

Annex 1 to WFD sets out a non-exhaustive list of disposal operations, among this landfilling, incineration with low energy recovery, and injection into land.

Table 1-2: Examples for waste management operations

Examples for waste management operations
<p>Recovery: recovery operations can comprise material recovery and energy recovery operations. Examples for material recovery are amongst others: composting, recycling of plastics (PET bottles)</p> <p>Examples for energy recovery are thermal treatment and incineration with energy recovery according to the R1 efficiency formula</p>
<p>Preparing for reuse: cleaning, checking and repairing used products which have become waste so that they can be used again. This is very common in regard to repairing bikes, furniture and construction materials</p>
<p>Recycling: use of waste as a raw material in production processes such as paper, glass and metal production</p>
<p>Other recovery: Energy recovery according to incineration with energy recovery compliant with the R1 efficiency formula and other recovery as processing for fuels and backfilling</p>
<p>Disposal: Landfilling, incineration without energy recovery or energy recovery which does not comply with the criteria defined with the R1 efficiency formula</p>

1.5 Definitions in relation to waste collection

1.5.1 What is meant by “collection” and “separate collection”?

“Collection” is defined by Article 3(10) WFD as: “the gathering of waste, including the preliminary sorting and preliminary storage of waste for the purposes of transport to a waste treatment facility.”

The moment of collection is the beginning of any waste management processes which are covered by the Directive. A treatment facility is to be understood in terms of the definition for “treatment” in Article 3(14) WFD, namely as a facility where “recovery or disposal operations, including preparation

prior to recovery or disposal” is carried out.

“Separate collection” is defined by Article 3(11) WFD as a collection where a waste stream is kept separately by type and nature so as to facilitate a specific treatment (see for details below chapter 4).

1.5.2 What are the different types of storage recognised by the WFD?

Recital 15 of WFD distinguishes between different types of storage of waste:

- the temporary storage of waste pending its collection,
- the storage of waste pending treatment, and
- the storage of waste as part of the collection process.

The distinction between the terms is relevant, since Article 23 and 26 WFD on permit and registration requirements, respectively clearly distinguish between collection (including temporary storage) on the one hand and treatment operations. The latter includes storage pending recovery/disposal operations, which is classified as entries D15 of Annex I and R13 of Annex II to the WFD.

1.5.2.1 *The preliminary storage of waste, pending collection*

The preliminary storage of waste pending its collection takes place at the site of generation. This preliminary storage, pending collection on the site where the waste is produced is not a waste treatment operation according to entries D15 Annex I (together with footnote (***)) and R13 Annex II (together with footnote (****)) to the WFD.

1.5.2.2 *The (preliminary) storage of waste as part of the collection process*

Recital 16 of the WFD states that the “preliminary storage” referred to as part of the “collection” definition (Art 3(10) WFD) is understood as “*storage pending its collection in facilities where waste is unloaded in order to permit its preparation for further transport for recovery or disposal elsewhere*”. This means “preliminary storage” is storage at a facility other than the one which produced the waste in the first place. The distinction between preliminary storage of waste pending collection and the storage of waste pending treatment should be made, in view of the objective of this Directive, according to the type of waste, the size and time period of storage and the treatment objective of the collection. This distinction should be made by the Member States.

1.5.2.3 *The storage of waste pending treatment*

The storage of waste pending treatment is storage at the facility where it will undergo a disposal or recovery operation. The storage of waste pending treatment is a waste treatment operation

according to entries D15 Annex I and R13 Annex II to the WFD. If the duration of storage of waste pending recovery exceeds three years, or the storage of waste pending disposal exceeds one year, the site for the deposit of waste is defined as a landfill site according to Article 2 lit. (g) of the Landfill Directive 1999/31/EC.

1.5.3 For which collecting activities are permits required under the Directive?

According to Article 23 WFD, permits are required for waste treatment operations, i.e. disposal or recovery operations set out in the WFD. A permit is not required for waste collection and preliminary sorting and storage, which is regarded as part of collection.

Article 24 WFD stipulates that Member States may exempt the requirement for a permit in the case of:

- a) Disposal of non-hazardous waste on the site where it is produced. There is a proviso that BAT must be used in such an instance.
- b) Recovery of waste.

In such cases Member States must set out the types and quantities of waste that are covered by such an exemption, as well as the method of treatment to be used (Article 25 WFD). Such exemptions must still ensure waste is treated without endangering human health or harming the environment. Where hazardous waste for recovery is exempted, additional requirements are set out.

1.5.4 For which collecting activities is registration required under the Directive?

According to Article 26 WFD, registration is required for:

- Establishments/undertakings which collect or transport waste on a professional basis;
- Establishments/undertakings that have received an exemption from permit requirements for recovery/disposal of their own waste on their own site;
- Dealers or brokers.

This registration can be in accordance with any existing systems in operation by Member States.

In terms of collecting or transporting waste “on a professional basis” means the company's business purpose is the collection and transport of waste. The CJEU found in the *Tombesi* case²⁸ that “establishments or undertakings which collect or transport waste on a professional basis or which arrange for the disposal or recovery of waste on behalf of others, where not subject to authorisation,

²⁸ Joined cases C-304/94, C-330/94, C-342/94 and C-224/95, *Tombesi et al* (1997).

are to be registered with the competent authorities“.

Examples of waste collection activities which are usually conducted on a professional basis and do require registration are:

- Collection of waste by charities
- Collection of waste from farms by a waste contractor on a scheduled route.

In reverse, waste collection schemes which are not conducted on a professional basis are not subject to registration; recital 17 WFD lists examples of such schemes as waste medicines collected by pharmacies, take-back schemes in shops for consumer goods and community schemes in schools.

Any waste collection activity which is not conducted on a professional basis is exempted (according to Article 20 para 2 WFD) from the requirements in relation to hazardous waste of Articles 19 (labelling) and 35 (record keeping) WFD.

2 Exclusions from Scope

2.1 Background of exclusions, types of exclusions under WFD

The revised WFD aims at introducing clarity into what is covered by the Directive, and what is not. The exclusions refer to items which would fulfil the definition of waste (see above chapter 1.1), yet for different reasons should not be subject to the regime of the WFD.

The WFD recognises diverse regulatory approaches for exclusions:

- Article 2(1) lists unconditional exclusions from the scope of the Directive;
- Article 2(2) excludes items “*to the extent that they are covered by other Community legislation*”. In comparison with previous legislation, it has been clarified that only EU legislation and not Member States’ legislation may lead to an exclusion (a question which was discussed by the CJEU in the *Avesta Polarit* case Rz 44 ff). Member States are left to Article 193 TFEU /Ex-Article 176 EC Treaty. The other Community legislation referred to must contain precise provisions organising the management of waste and ensure a level of protection which is at least equivalent to that resulting from the WFD.²⁹
- Article 2(3) WFD excludes sediments “*without prejudice to other Community legislation*”. This provision is explained in chapter 2.6.

There are exclusions from the scope of the WFD that are new, as well as exclusions that have been modified, compared to previous waste legislation (Directive 2006/12/EC), and the total number of exclusions has significantly increased. Some of the exclusions are detailed in this chapter.

Exclusions have to be distinguished from specific rules for particular instances and from the management of particular categories of waste as laid down in specific EU Directives that are supplementary to the WFD. These Directives on waste treatment operations or on waste streams complement the WFD in their scope. With regard to the WFD, each specific Directive has *lex specialis* status. In cases where the definitions in these Directives depart from those in the WFD (see e.g. the definition of “treatment” in ELV Directive 2000/53/EC, or the definition of “recycling” in Packaging Waste Directive 94/62/EC), the definitions of the specific Directives apply³⁰. The WFD, however, applies in all cases that are not subject to an exhaustive rule by a specific Directive.

²⁹ Case C-114/01 *Avesta Polarit* (2003), para 61; *Thames Water* (2007) para 34; Case C-121/03 *Manure* case (2005), para 69.

³⁰ Case C-444/00 *MayerParry* (2003), para 57.

2.2 Unconditioned exclusion for land (in situ), unexcavated contaminated soil and buildings (Art. 2(1) lit. (b) WFD)

2.2.1 Subject and background

Article 2(1) lit. (b) WFD excludes “*land (in situ) including unexcavated contaminated soil and buildings permanently connected with land*” from the scope of the WFD.

“In situ” essentially means in the original position; the exclusion relates to land, soil and buildings that are in their original position and have not been disturbed, for example through excavation or demolition.

The background to this exclusion, which has been newly introduced into the WFD, is the “van de Walle” ruling³¹ where the CJEU found that the holder of hydrocarbons which are accidentally spilled and which contaminate soil and groundwater “discards” this material. As a result, such hydrocarbons were found to be classified as waste, and so, contaminated soil became subject to the waste regime. This has led to discussions on how to co-ordinate waste legislation with soil protection legislation.

2.2.2 How is the term “contaminated soil” to be understood?

The term “contaminated soil” is not defined in the WFD or in other legal acts at Community level. A minimum criterion to be applied by competent authorities to determine whether soil is considered as contaminated is whether it exhibits any of the “properties of waste which render it hazardous” as per Annex III to the WFD. Furthermore, the term “contaminated” can be clarified by comparing it to its opposite, the term “uncontaminated soil” in Article 2(1) lit. (c) WFD. From the wording of that provision “uncontaminated soil and *other* naturally occurring material” it can be derived that uncontaminated soil essentially relates to virgin soil or soil that is equivalent to virgin soil. In the absence of EU standards, national soil legislation (where existing) can be consulted to determine the type and level of trace contamination at which a soil might be considered equivalent to virgin soil.

2.2.3 Examples of exclusions under this provision

- Unexcavated contaminated soil beneath the forecourt of a service station
- Asbestos tiles on the roof of a building
- A derelict building
- A greenfield site prior to construction.

³¹ Case C-1/03 van de Walle (2004).

not legally binding

2.3 Unconditional exclusion for excavated soil and other naturally occurring material (Art. 2 (1) lit. (c) WFD)

2.3.1 Subject and background

The unconditional exclusion of Article 2(1) lit. (c) WFD relates to *“uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated”*.

The background to this exclusion is that waste management regime was commonly regarded as inappropriate for this kind of material, even if the definition of discarding is fulfilled.

In order to be excluded from the scope of the WFD, the requirements here are three-fold. The material must be:

- uncontaminated
- must be excavated during the construction activities
- is certain to be used in its natural state for construction purposes on the same site.

The waste management regime applies to any material used in construction that does not cumulatively meet these three criteria. This of course includes the possibility to assess if the criteria on by-products and end-of-waste can be met (see above chapter 1.3), as emphasised by recital 11 of WFD.

2.3.2 What is meant by “uncontaminated soil”?

“Uncontaminated soil” essentially relates to virgin soil or soil that is equivalent to virgin soil (see above chapter 2.2.2). Other naturally occurring material means soil, stones, gravel, rock, etc. Man-made material like concrete, or items that have been modified by man, e.g. wooden materials, is not excluded from the scope of the WFD.

2.3.3 Examples of certainty of use of a material in the sense of Article 2(1) lit. (c) WFD

In order to be excluded, the excavated material must be used in a construction activity on the site. Certainty of use could be inferred from, for example:

- Construction plans or designs for the site in question. These may contain estimates of excavated amounts and whether there will be a surplus or deficit of such material.

- Planning permission conditions.
- Construction & demolition waste management plans, if required.
- For larger scale developments, the Environmental Impact Statement (EIS).

2.3.4 What does “on the site” mean?

A construction site will usually be defined in relation to the associated planning permission.

Examples of what is considered to be “on the site” include:

- A construction project for a 100 km motorway, where excavated material from one section of construction is used in its natural state in the same construction section.
- A construction company carrying out construction works in a single location with the resulting excavated material used in its natural state on the same site by a landscaping company.
- Soil or other such material temporarily taken from the site and returned later and used on the site for the purposes of construction (the transport operation as such is not relevant).

2.4 Unconditional exclusion for agricultural and forestry material (Art. 2(1) lit. (f) WFD)

2.4.1 Subject and background

Article 2(1) lit. (f) WFD excludes *“faecal matter, if not covered by paragraph 2(b), straw and other natural non-hazardous agricultural or forestry material used in farming, forestry or for the production of energy from such biomass through processes or methods which do not harm the environment or endanger human health”*.

2.4.2 Faecal matter and the relationship to the animal by-products (ABP) exclusion of Article 2(2) lit. (b) WFD

Faecal matter consists of faeces and urine excreted by animals in an agricultural or forestry setting. It does not include human faecal matter.

The unconditional exclusion of Article 2(1) lit. (f) WFD applies to faecal matter only where the animal

by-products (ABP) exclusion of Article 2(2) lit. (b) WFD does not cover the material. Following the approach of the ABP Regulation (EC) 1069/2009 (see for further details on the ABP Regulation below chapter 2.5) which covers “manure” as defined in Article 3(20) ABP Regulation (EC) 1069/2009 (“*excrement and/or urine of farmed animals other than farmed fish (...)*”), this means in essence that the exclusion of faecal matter from WFD applies to animals other than farmed animals.

2.4.3 Straw and other “natural non-hazardous” material

According to the exclusion, the (non-) hazardousness of the material is a decisive criterion; it has to be assessed according to the criteria of Article 3(2) and Annex III to WFD. Examples of materials from agriculture or forestry that could be considered natural non-hazardous materials are:

- Straw from grain and other crops
- Cut grass
- Natural wood, wood off-cuts, wood chips, saw-dust, etc.
- Other biomass.

2.4.4 Processes which do not harm the environment or endanger human health

The provision “*not harming the environment or endangering human health*” applies to the entire paragraph, namely any use of the specified materials in agriculture or forestry, as well as their use to produce energy.

The minimum standard for not harming the environment or endangering human health is compliance with the standards of EU environmental legislation.

2.5 Animal by-products (ABP) exclusion (Article 2(2) lit. (b) WFD)

2.5.1 Subject and background

Following Article 2(2) lit. (b) WFD, “*animal by-products including processed products covered by Regulation (EC) No 1774/2002, except those which are destined for incineration, landfilling or use in a biogas or composting plant*” are excluded from WFD to the extent that they are covered by that Regulation.

Note that Regulation (EC) 1774/2002 is repealed with effect of 4 March 2011 by ABP Regulation (EC) No 1069/2009. Article 54 para 2 of that Regulation states that „References to Regulation (EC) No

1774/2002 shall be construed as references to this Regulation and shall be read in accordance with the correlation table laid down in the Annex.”

ABP Regulation (EC) 1069/2009 aims to exclude dead animals and other condemned materials from the animal feed chain and achieve safe processing and disposal of animal by-products produced in the Union. Under the ABP Regulation, only materials derived from animals declared fit for human consumption following veterinary inspection may be used for the production of feed. Section 4 of the ABP Regulation 1069/2009 distinguishes between three categories of material (with material of category 1 bearing the most risks) and provides for a distinct system of treatment for each category.

2.5.2 Basic approach and counter exception for ABP destined for waste treatment

The scope of waste legislation as regards ABP subject to the ABP Regulation was to be clarified by new WFD. The rationale is that duplication of rules should be avoided and that ABP should be excluded from the scope of the WFD wherever they are intended for uses that are not considered waste operations (see recitals 12 and 13 of WFD).

Consequently, ABP in the sense of ABP Regulation are excluded, but the exclusion contains a counter-exemption for those ABP which are destined for incineration, landfilling or use in a biogas or composting plant since these are typical waste treatment operations with environmental risks which have to be monitored under the waste legislation. This essentially means that determining whether an ABP covered by Regulation (EC) No 1069/2009 is subject to waste legislation depends on its fate.

In practice, the assessment as to whether a material is handled under the ABP regime or under waste management legislation is sometimes complex. The outcome of such an assessment may have considerable repercussions, possibly starting with the question of the appropriate competent authority in the Member States. As an example, the approach for catering waste is described below.

2.5.3 Example of catering waste

Box 2: Example of catering waste

ABP Regulation (EC) No 1069/2009 excludes catering waste (note that the definition of waste is identical to the one under the WFD, Article 3 No. 27 ABP Regulation (EC) No 1069/2009) from its scope, except under certain conditions. In all cases where these conditions are not met, material meeting the WFD definition of waste will be subject to waste management legislation and not ABP Regulation.

The conditions under which catering waste is subject to ABP Regulation are as follows:

- i. If catering waste originates from means of transport operating internationally;**
- ii. If catering waste is destined for feeding purposes;**

- iii. **If catering waste is destined for processing by pressure sterilisation or other methods for processing animal by-products, in particular as regards the parameters to be applied for those processing methods, notably the time, temperature, pressure and size of particles.**

Furthermore, as long as the material is destined for one of the treatment methods listed in Article 2(2) lit. (f) WFD, it is again subject to waste management legislation. For catering waste originating from means of transport operating internationally, landfilling is indeed the only allowable treatment under the ABP Regulation (see Article 8 lit. (f), 12 lit. (d) ABP Regulation (EC) No 1069/2009). Thus, it is subject to the WFD.

2.5.4 Is burning of ABP and derived products as a fuel excluded from the scope of the WFD?

The ABP Regulation distinguishes between ABP which are waste and ABP which are used as a fuel (see e.g. Article 12 lit. (a), (b) and (e) ABP Regulation). Whether e.g. the incineration of ABPs in the sense of the ABP Regulation (including “derived products” under ABP legislation, e.g. tallow) as a fuel is subject to waste legislation, depends in the first place as to whether the material meets the definition of waste under the WFD and the related definition of “by-product” together with the criteria as outlined above (see above chapters 1.1, 1.2). If it is subject to waste legislation, the incineration operation has to comply with the requirements of Waste Incineration Directive 2000/76/EC.

An additional problem arises from the fact that the list of waste treatment operations in Article 2(2) lit. (b) WFD subject to the counter exception contains “incineration” only while “co-incineration” is not mentioned. Co-incineration is recognised as a separate category to incineration by the Waste Incineration Directive 2000/76/EC. It could be interpreted that co-incineration would not be covered by the counter exception for waste treatment operations of Article 2(2) lit. (b) WFD and would, therefore, be excluded from the scope of the WFD. However, considering the demarcation between the two legislative areas, as reflected by recital 12 of the WFD, ABPs should be excluded from the scope of the WFD “where they are intended for uses that are not considered waste operations”. The term “incineration” has to be understood as a typical waste treatment operation, and consequently includes co-incineration even if not explicitly mentioned.

Therefore, ABPs which are waste and intended for either incineration or for co-incineration are included in the scope of the WFD, and should consequently be carried out in accordance with the Waste Incineration Directive 2000/76/EC.

2.6 Dredging sediments exclusion (Article 2(3) WFD)

2.6.1 Subject and background

The exclusion of Article 2(3) WFD relates *“without prejudice to obligations under other relevant Community legislation”* to *“sediments relocated inside surface waters for the purpose of managing waters and waterways or of preventing floods or mitigating the effects of floods and droughts or land reclamation (...) if it is proved that the sediments are non-hazardous”*.

Obligations from other Community legislation, namely arising from the Water Framework Directive, are not affected by the exclusion.

2.6.2 Requirements for sediments

Non-hazardous dredging sediment is excluded from the scope of the WFD only where it is put elsewhere within surface waters e.g. for the purposes of:

- Waters/waterways management;
- Preventing floods;
- Mitigating the effects of floods;
- Mitigating the effects of droughts.

It should be noted that it is not dredging which is excluded, but the sediment from dredging. Thus, the exclusion for the purpose of managing waters etc., applies not to the dredging, but to the relocation of the sediment. If sediments are further used outside water bodies, the criteria for exclusion under Article 2(3) WFD are not fulfilled and waste management legislation applies. In all cases the sediments must be non-hazardous, taking into account the criteria of Article 3(2) WFD.

3 Waste hierarchy

The waste hierarchy is the corner stone of European waste policies and legislation. Its primary purpose is to minimise adverse environmental effects from waste and to increase and optimise resource efficiency in waste management and policy. In order to achieve these results waste policies must be based on life-cycle thinking.

3.1 What is the impact of the new waste hierarchy and what has changed compared with the previous hierarchy?

The new waste hierarchy, as laid down in Article 4 WFD, is a priority rule for waste management, reflecting a general approach under EU waste management law. The hierarchy sets out five possible ways of dealing with waste (although, technically, “prevention” is not a waste management measure because it pertains to substances or objects before they become waste) and prioritises these measures as follows:

- (a) Prevention;
- (b) Preparing for re-use;
- (c) Recycling;
- (d) Other recovery, e.g. energy recovery; and
- (e) Disposal.

This prioritisation “lays down a priority order of what constitutes the best overall environmental option in waste legislation and policy” (recital 31 WFD).

The most important modifications in contrast to the previous waste hierarchy of Directive 2006/12/EC are as follows:

- The former waste hierarchy, which contained prevention, recovery and disposal, has been expanded to five steps;
- “Preparing for re-use” has been introduced as a new concept;
- Previous waste legislation gave equal importance to preparation for re-use, recycling and other recovery. In line with the aims of improving resource efficiency and moving the EU closer to a recycling society (see recital 28), the new WFD distinguishes between these, now ranking preparing for re-use above recycling, while recycling is ranked above other types of recovery.

- Applying the waste hierarchy has been made mandatory (see below chapter 3.3) while rules determining cases where departures from the hierarchy are allowed have been laid down (Article 4(2) WFD).

3.2 How does life-cycle thinking relate to the waste hierarchy?

By introducing life-cycle thinking into waste policies the WFD integrates waste policies into the broader framework of reducing environmental pressures and increasing resource efficiency. Over their life-time, products (goods and services) can contribute to various environmental impacts. Life Cycle Thinking (LCT) is a conceptual approach that considers upstream and downstream benefits and trade-offs associated with goods and services. LCT takes into account the entire life cycle, starting with the extraction of natural resources through material processing, manufacturing, marketing, distribution, use, recycling and waste treatment to the disposal of remaining waste.

Pursuant to Article 4(2) Member States shall take measures to encourage the options that deliver the best overall environmental outcome. This might require specific waste streams departing from the waste hierarchy when this is justified by life-cycle thinking on the overall impacts of the generation and management of such waste. The waste hierarchy has been drawn up implicitly taking life cycle approaches into account. In fact, generally, following the waste hierarchy should therefore lead to waste being dealt with in the most resource-efficient and environmentally sound way. The option to deviate from the waste hierarchy is therefore restricted to specific waste streams. Also, in some cases, a number of alternatives exist at a given level of the waste hierarchy e.g., different recycling alternatives for a given waste stream. These alternatives may not be equivalent from an environmental perspective. Care needs to be taken not to simply shift environmental problems from one area to another. Decision-makers need to base their choices on firm factual evidence. A scientifically sound approach to ensure that the best outcome for the environment can be identified is provided by Life Cycle Thinking (LCT).

The Waste Framework Directive, therefore, promotes the use of LCT as a concept to complement and, when necessary, refine the waste hierarchy for decision support in waste management.

3.3 Is the waste hierarchy legally binding and under what conditions are departures from the hierarchy allowed?

Pursuant to Article 4(1) WFD the waste hierarchy is legally binding for Member States *“as a priority order in waste prevention and management legislation and policy”*.

It should be noted that Article 4(2) WFD gives Member States certain flexibility. They shall encourage those options that deliver the best environmental outcome. However, a deviation from the priority order of the waste hierarchy is limited to derogations for specific waste streams. Moreover, there

has to be a justification for deviations and the method mandatorily to be used when justifying departure from the hierarchy is “life-cycle-thinking”. Article 4(2) WFD allows departure from the hierarchy in cases where LCT indicates that the observance of the hierarchy leads to higher environmental impacts. Summarising, derogating from the priority order should be an exemption for single waste streams and needs justification using life-cycle thinking methodology. Furthermore, when applying the waste hierarchy Member States shall ensure that the development of waste legislation and policy is a fully transparent process, observing existing national rules about the consultation and involvement of citizens and stakeholders. Member States shall take into account the general environmental protection principles of precaution and sustainability, technical feasibility and economic viability, protection of resources as well as the overall environmental, human health, economic and social impacts (Article 4(2) WFD).

Table 3-1: Examples for applying LCT in waste management³²

Examples for applying LCT in waste management

Example: Optimisation of steel-can packaging

Coffee products arrive to the shelves of grocery shops in packaging of different materials, sizes and weights. What are the environmental consequences?

An LCA study was carried out in the US to compare a number of different coffee packaging systems.³³

The comparison criterion was the emission of greenhouse gases associated with the different packaging systems. The functional unit was set to approximately 3 tonnes of coffee.

As an extract from this study, two alternative steel-can packaging were compared, differing only in the coffee volume capacity:

- **Alternative 1: small steel-can. The overall weight of packaging per functional unit is equal to about 850 kg. The greenhouse gas emission associated amounts to about 2,000 kg CO₂-eq.**
- **Alternative 2: big steel-can. The overall weight of packaging per functional unit is equal to about 610 kg. The greenhouse gas emission associated amounts to about 1,400 kg CO₂-eq.**

The use of the big steel-can therefore allows reducing the weight of packaging per unit mass of coffee product. This moves towards waste prevention. Overall, a reduction of about 30% of the overall weight per functional unit (850 to 610 g) results in comparable reduction of 30% of the greenhouse gas emissions associated. This confirms that if waste prevention can be achieved by using less material – without negatively impacting other areas – it will be highly beneficial and should be promoted. The results of this study are being considered for promoting the use of more environmentally sustainable alternatives for

³² Examples taken from European Commission, Supporting Environmentally Sound Decisions in Waste Management (March 2011), not yet published.

³³ Oregon Department of Environmental Quality, Oregon Strategy for Greenhouse Gas Reductions, available at <http://www.deq.state.or.us/wmc/packaging/cs/csnormthompson.pdf>

Examples for applying LCT in waste management

packaging of coffee products.

Example: Should cars be made of lighter or more recyclable materials?

Cars manufacturing requires a wide variety of materials. Steel has traditionally been used, but it is partly being replaced by plastics and composite materials. Steel can be heavier than the plastics or composites with the same function. This adds weight to the car, which in turn increases the fuel needed to operate the car throughout the use phase. However, steel parts are easily recycled at the end of the vehicle's life, while often composites are not.

For a specific case, an environmental impact analysis³⁴ showed that only if a car is driven more than approximately 132,000 km there is a net benefit gained by using the lighter but less recyclable materials. In other studies and for other car components it was found that light weight construction pays off already after 50.000 km driving or only after > 200.000 km driving distance. In this example there is a trade-off between two environmental benefits. One is the lower fuel consumption due to the use of lighter materials and the other is the energy savings due to recycling. Note that any benefit will also depend on other factors, e.g. the replaced parts and the car type.

This example illustrates that it is important to consider a number of aspects of a product along its entire life cycle, including its weight and recyclability. Reducing weight is typically seen as a way of limiting the adverse environmental impacts of a product. However, this needs to be balanced against the recyclability of the product and its components. The example further suggests that if plastic components were more easily recyclable, benefits for the environment could be greater.

Example: Is recycling plastic bottles better than incineration with energy recovery?

A frequent issue in waste management is to decide whether it is environmentally preferable to recycle or to incinerate used products. LCA helps addressing this issue. In this example, plastic bottles are considered and, for simplicity, only the energy aspects are accounted for.

The production of plastic bottles requires about 80 MJ/kg (energy per kilogramme) Incineration can produce about 3 MJ/kg of electricity and about 10 MJ of process steam from the recovered energy³⁵. However, despite this small energy gain, new bottles would have to be produced, requiring high amounts of energy. In contrast, recycling and selective collection consumes 9 MJ/kg while avoiding the much higher energy consumption used in the production of new plastic from raw materials.

In this simplified example, recycling can therefore save 71 MJ of energy consumption.³⁶ This however implicitly assumes that the plastic is not degraded in the recycling process or heavily soiled.

³⁴ Dufloy JR, et al. Environmental impact analysis of composite use in car manufacturing. CIRP Annals - Manufacturing Technology (2009)

³⁵ ELCD Database : <http://lct.jrc.ec.europa.eu/>

³⁶ For amorphous PET ("Bilan environnemental sur les filières de recyclage : l'état des connaissances ACV"). Agence de l'Environnement et de la Maîtrise de l'Energie - ADEME (2001).

Examples for applying LCT in waste management

From an energy-saving perspective and using a life cycle approach, the example confirms the priority that the waste hierarchy indicates: recycling better than energy recovery.

Example: is recycling of paper and cardboard always the best environmental option?

A study from the Waste & Resources Action Program (WRAP) “Environmental benefits of recycling – update 2010”³⁷ included paper and cardboard waste among the waste streams considered.

In most cases, it was found that recycling delivers the most environmentally-sound performance, as it typically offers more environmental benefits (e.g. avoided emissions) and lower impacts than other options. In any case, this review also highlights where deviations from the waste hierarchy may lead to better solution from an environmental perspective.

With respect to paper and cardboard waste, it was concluded that recycling offers a better overall environmental performance compared to landfilling. On the other hand, the environmental preference between recycling and incineration with energy recovery is harder to establish, especially with regards to impact categories such as resource depletion, climate change, eutrophication, ecotoxicity and human toxicity. It was also found that the single most important parameter influencing the environmental preference between recycling and incineration of paper and cardboard waste is the energy mix that is substituted by the energy produced by the incineration option.

This example shows that, while landfilling of paper and cardboard waste environmentally does not compare with recycling, the environmental preference between recycling and incineration with energy recovery may change. An LCA can, in this case, help establish the preferable environmental option and identify the extent to which the various parameters involved (e.g. recycling rate, energy recovery efficiency, energy mix) influence the overall performance.

3.4 Who has to observe the hierarchy principles?

The addressees of the waste hierarchy are the Member States, which have to respect the waste hierarchy in their entire waste management policy and legislation.

Also directly concerned are regulators and authorities at regional and local level. The CJEU has repeatedly held that “[The obligation of a Member State to take all the measures necessary to achieve the result prescribed by a directive], whether general or particular, is binding on all the authorities of Member States including, for matters within their jurisdiction, the courts.”³⁸ This means that the Hierarchy is to be observed and applied by all administrative levels within one Member State

³⁷ Michaud, J.C., Farrant, L., Jan, O., Kjaer, B. & Bakas, I. Waste & Resources Action Program – WRAP (2006/2010): “Environmental benefits of recycling – 2010 update.”

³⁸ Case C-129/96 Inter-Environnement Wallonie ASBL v Région wallonne (1997), para 40.

that are concerned with waste policies and legislation.

In a number of provisions of new WFD (e.g. Articles 8, 10, 15, 21, 22, 28), a reference is made to the waste hierarchy emphasising its function as an overall principle, often together with other key principles of the WFD, namely the provisions on protection of human health and the environment of Article 13. Member States authorities while implementing these provisions will therefore also have to consider how to bring the waste hierarchy into effective application in this context.

In particular Article 28(1) and 29(1) WFD emphasise that waste management plans and waste prevention programs have to be established in accordance with the waste hierarchy.

Another important area where the waste hierarchy is referred to is the “responsibility for waste management” (Article 15 WFD) which requests Member States to lay down responsibilities for producers and holders of waste in accordance with Article 4 and other actors in the waste management area; any of these national rules therefore have to comply with the waste hierarchy. Thus, through national measures, private actors such as the waste management industry might be obliged to respect the waste hierarchy as well.

3.5 What is the relation between life-cycle thinking and life-cycle assessment?

The fundamental objective of life-cycling thinking (LCT) is to be aware of the overall environmental impact of the product or service. It aims to ensure that certain environmental impacts are not omitted when evaluating alternatives and that simply shifting environmental impact from one environmental medium to another is avoided. It thus makes decisions transparent and more reasonable and efficient.

Under the conceptual framework defined by LCT, a number of quantitative decision support methods exist, such as Life Cycle Assessment (LCA), Cost-Benefit Analysis (CBA), Life Cycle Costing (LCC), and Social LCA (S-LCA). Using these methods allows for comprehensive, science-based support to decision making and policy making, as environmental, social, and cost-related aspects can be simultaneously considered.

For environmental aspects LCT is supported in the most comprehensive manner by the use of the quantitative tool Life Cycle Assessment (LCA), as defined by the ISO 14040 and 14044. Among the existing, previously mentioned, LCT-based methods, Life Cycle Assessment (LCA) is the most widely used for consideration and quantification of the environmental aspects.

In some cases, detailed assessments may not be required. Simplified insights, criteria, or tools based on such assessments can also be used. Further detailed guidance on the application of LCT/LCA on

waste management is given in the technical guidance documents published by the JRC³⁹. As a starting point, the JRC Guidance on LCT/LCA for policy makers and business⁴⁰ provides a number of approaches to assess life cycle impacts of products, such as Carbon Footprinting, Material Flow analysis and Life Cycle Costing.

3.6 How can life-cycle methodology be applied on waste management decisions?

When LCT/LCA are applied to waste management services, typically the assessments focus on a comparison of different waste management options, not covering the entire life-cycle of the products which have become waste. For example, when evaluating different options for biowaste management, usually the production stages of the food that has become biowaste, are not considered. Therefore, LCT/LCA applied to waste management services can differ from product LCT/LCA, which accounts for the entire life-cycle of a product, in which waste management may play only a minor role. However, if one of the evaluated waste management options includes that materials are given back into the life cycle of a product, a product life cycle perspective has to be taken into account also in LCT/LCA for waste management services. For example, when looking at municipal waste management including recycling, the benefits of saving virgin raw materials in the production stages of products have to be taken into account.

³⁹ These guidance documents will be published soon as JRC scientific reports on the JRC website.

⁴⁰ European Commission, Making sustainable consumption and production a reality (2010), available at <http://lct.jrc.ec.europa.eu/pdf-directory/Making%20sustainable%20consumption%20and%20production%20a%20reality-A%20guide%20for%20business%20and%20policy%20makers%20to%20Life%20Cycle%20Thinking%20and%20Assessment.pdf>.

4 Separate Collection

4.1 What is understood as “separate collection” by the WFD?

“Separate collection” is defined by Article 3(11) WFD as a collection where a waste stream is kept separately by type and nature so as to facilitate a specific treatment.

Further information on separate collection can be found in chapter 1.5.1)

4.2 What is the basic rationale behind separate collection?

The basic rationale behind the idea of separate collection is reflected by recital 28 WFD: *“In line with [the objective of helping move the EU closer to a recycling society], and as a means to facilitating or improving its recovery potential, waste should be separately collected before undergoing recovery operations that deliver the best overall environmental outcome”*. Additionally, the recital outlines that the separation of hazardous compounds from waste streams may contribute to achieving environmentally sound management. Thus, separate collection aims at facilitating recycling and enhancing the quality of recycled products, as well as identifying and eliminating hazardous compounds of mixed waste in order to reduce impacts.

Recital 28 WFD refers to *“source separation”*, by this asking for a separation at the moment when waste is generated for the first time, rather than separating mixed waste.

In line with these objectives, separate collection is sought in order to ultimately achieve treatment, and in particular the recovery and recycling of separated fractions of waste. This requires separate storage and transport of separately collected waste fractions as well as an observance of the ban on mixing of waste (see below chapter 5).

4.3 What categories of separate collection does the WFD refer to and which actors are concerned?

The WFD distinguishes between different categories of separate collection, each applying to different waste streams. The addressees of the setting up of separate collection are the Member States. There are different degrees of obligations. The following four categories are recognised by the WFD:

1. A general obligation to encourage separate collection to facilitate recovery;
2. A general obligation to introduce separate collection to facilitate recycling;

3. An obligation to introduce separate collection for paper, metal, plastic and glass to facilitate recycling of these waste streams;

4. An obligation to introduce separate collection for waste oils and encourage separate bio-waste collection.

The obligations set out by the WFD are completed by requirements on separate collection in the following waste stream related directives:

- Article 5 WEEE Directive 2002/96/EC,
- Article 7 Batteries Directive 2006/66/EC,
- Article 6 (1) and (3) / Annex 1 End-of-life-vehicles Directive 2000/53/EC,
- Article 7 Packaging waste Directive 94/62/EC, and
- Article 6(3) Directive on PCB/PCT containing waste 96/59/EC.

4.3.1 General obligation to encourage separate collection to facilitate recovery

Article 10(2) WFD encourages Member States to make use of separate collection of waste to facilitate or improve recovery. This provision applies to all waste streams. A precondition is that the separate collection is “*technically, environmentally and economically practicable*” (see below chapter 4.4).

Further, by referring to compliance with Member State’s obligations as of Article 10(1) WFD, Article 10(2) WFD makes it clear that that the separate collection has to be a necessary measure to ensure that waste undergoes recovery operations in accordance with the principles set out in Articles 4 (waste hierarchy, see above chapter 3) and 13 (Protection of human health and the environment) WFD.

As a practical example for the application of the waste hierarchy when considering separate collection, if energy recovery by incineration (recovery operation R1 of Annex II to WFD) of separately collected household waste does not generate an environmental benefit in comparison with not-separated household waste, separate collection is not needed. **Contrary, if the environmental outcome of recycling is better than incineration (with or without energy recovery) or landfilling of mixed waste, the waste streams should be collected separately.**

In cases where the preconditions are met, the MS are obliged to introduce separate waste collection.

4.3.2 General obligation to introduce separate collection to facilitate recycling

Following Article 11(1) para 2 WFD, Member States shall set up separate collection schemes as measures to promote high quality recycling. Taking in mind that recycling is a specific case of recovery (see above chapter 1.4.6), Article 11 is *lex specialis* in comparison with Article 10, meaning that in cases where separate collection is needed to facilitate waste recycling Article 11 to apply.

Article 11(1) para 2 applies to all waste streams similar to Article 10(2) WFD, and again a precondition is that the separate collection is “*technically, environmentally and economically practicable*” (see below chapter 4.4). An additional condition is that the separate collection should be “*appropriate to meet the necessary quality standards for the relevant recycling sectors*”. Note that “high quality recycling” as mentioned in Article 11 is orientated to the quality standards of the recycling industries; it does not include down-cycling (such as the use of plastic waste to produce heavy park benches replacing benches made from wood).

Article 11(1) para 2 WFD indicates that Member States “*shall set up*” separate collection schemes whereby the preconditions are met.

4.3.3 Obligation to introduce separate collection for paper, metal, plastic and glass to facilitate recycling of these waste streams

Article 11(1) para 3 WFD contains a direct obligation (“*shall be set up*”) for Member States to introduce “at least” separate collection for the four explicitly listed waste streams - paper, metal, plastic and glass - by 2015. However, the provision contains a reference to Article 10(2) WFD, and by this to the condition that the separate collection of these waste streams is “*technically, environmentally and economically practicable*” (see below chapter 4.4). The viability of separate collection of the dry-fractions from household waste is clearly demonstrated by the longstanding practice and experience in many Member States. Therefore separate collection of these waste streams in principle has to be introduced also in the remaining Member States.

4.3.4 Possibility of co-mingling

An explicit statement towards co-mingled collection of different recyclable waste streams as one co-mingled stream) is not included in the WFD.

As a starting point, it should be taken into consideration following Article 11(1) para 3 WFD and under the conditions indicated in this provision, by 2015 separate collection shall be set up for at for paper, metal, plastic and glass. Separate collection is defined as waste stream specific separate collection (see above).

Going beyond this, the WFD approach towards recycling shows that for the four dry waste streams separate collection should be the general case, since the recycling of these waste streams is the preferred option in line with the principles of waste hierarchy.

On the other hand, setting up of a separate collection is subject to the principle of proportionality as well (*subject to Article 10(2): necessarily and technical, environmental and economic practicability*). Considering that the aim of separate collection is high quality recycling, the introduction of a separate collection system is not necessary, if the aim of high quality recycling can be achieved just as well with less effort than separate collection.

So, co-mingled collection of single waste streams may be accepted as a derogation from the requirement for separate collection, but the benchmark of “high quality recycling” of separately collected single waste streams has to be regarded; only if subsequent separation can achieve high quality recycling similar to that achieved with separate collection, co-mingling is acceptable against Article 11 WFD and the principles of waste hierarchy. **Practically, this usually excludes co-mingled collection of bio-waste and other “wet” waste fractions wastes; subject to separation technology, on the other hand, the co-mingled collection of plastic and metal and beverage cartons might be possible, if these materials are being separated with high purity in a subsequent treatment**

4.3.5 Obligation to introduce separate collection for waste oils and bio-waste

Article 21(1) lit. a WFD requires Member States to ensure that waste oils are collected separately, where this is technically feasible, thus, using a distinctive and more strict concept than the wording “*technically, environmentally and economically practicable*” as of Article 10 and 11. Consequently, Member States only may allow exemptions, where separate collection is not feasible due to technical reasons (e.g. the waste oil is contained in an end-of-life-vehicle before dismantling). Recital 44 WFD explains that the main motivation behind the separate collection of waste oils is the importance for the proper management of waste oils and the prevention of damage to the environment stemming from improper disposal of waste oils.

An additional separate collection requirement for waste oils of different characteristics is included in Art 21(1) lit. (c) WFD. The idea of this provision is that mixing waste oils of different characteristics together impedes recycling of waste oils, and leaves only treatment lower ranked in the waste hierarchy such as energy recovery.⁴¹

Article 22 WFD asks Member States to “*take measures, as appropriate, to encourage*” the separate collection of bio-waste, with a view to the composting and digestion of bio-waste. Note that Recital 35 WFD further explains the importance of facilitating separate collection of bio-waste, *inter alia* the reduction of greenhouse gas emissions from waste disposal in landfills. Compared with Article 21 WFD, which asks Member States to “*ensure*” separate collection with technical feasibility as the only condition, the wording of Article 22 WFD leaves the introduction of separate bio-waste collection to Member States’ discretion but obliges Member States – “*shall take measures*” – to concretely encourage separate collection.

⁴¹ See European Commission, Impact assessment on the Thematic Strategy on waste (2005), p. 59, available at http://ec.europa.eu/environment/waste/pdf/ia_waste.pdf.

In its Communication from 18 May 2010 on future steps in bio-waste management in Europe⁴² the commission comes to the conclusion that composting and anaerobic digestion offer the most promising environmental and economic results for bio-waste that cannot be prevented. An important pre-condition is a good quality of the input to these processes. This would in the majority of cases be best achieved by separate collection. **The Commission therefore recommends that Member States make fullest use of the possibilities opened by Articles 11 and 22 of the WFD to introduce separate collection systems as a matter of priority in line with the competition rules of the Treaty on the Functioning of the European Union.**

4.4 What does “technically, environmentally and economically practicable” mean as used in Article 10 and 11 WFD?

The combination of terms “*technically, environmentally and economically practicable*” describes the preconditions for Member States being, to different extents, obliged to set up separate collection under Articles 10 and 11 WFD. The wording has been introduced into the WFD without any preceding examples in EU waste management legislation.

Technically practicable means that the separate collection may be implemented through an appropriate, available, and feasible system. Ecologically practicable should be understood in a way that the ecological benefits added value justify possible negative environmental effects of the separate collection (e. g. additional emissions from transport). Economically feasible refers to a separate collection which does not cause excessive costs in comparison with the treatment of a non-separated waste stream, considering the added value of recovery and recycling and the principle of proportionality.

⁴² Available at http://ec.europa.eu/environment/waste/compost/pdf/com_biowaste.pdf.

5 Mixing ban

5.1 Subject and background; general approach of WFD to mixing of waste

The mixing of waste is common practice in the EU and is recognized as treatment operation by Annex I and II to the WFD (D13 / R13). In many fields of waste management, mixing of waste is daily practice.

However, EU legislation recognizes that individual waste streams should in principle be kept separate from other wastes and not mixed

- to ensure proper waste management (re-use/recovery of homogenous streams are generally easier than that for composite streams),
- to make management of wastes (and especially recycling and recovery operations) simpler given that characteristics of single waste streams can be easier to predict and to control than properties of mixed waste, and
- to avoid the contamination of waste streams which are suitable to be recycled and to avoid the dilution of hazardous substances in products which are generated from recycled materials, and
- to prevent mixing of waste with the intention to lower contamination levels and hazardous characteristics in order to meet limit values (see e.g. Article 5(4) Landfill Directive 99/31/EC) or to by-pass legal requirements (see e.g. mixing ban laid down in Article 19 of Waste Shipment Regulation (EC) No 1013/2006).

Regarding the aspect of the preference to homogenous waste streams, restrictions on mixing are closely connected to the principle of separate collection, as clearly shown in Article 10(2) WFD which applies to all waste streams: *“Where necessary to ensure and facilitate waste recovery waste shall be collected separately if technically, environmentally and economically practicable and shall not be mixed with other waste or other material with different properties.”*(see for details above chapter 4)

Particularly as regards hazardous wastes, the impacts of mixing are of concern as different hazardous wastes may be likely to react chemically with one another and aggravate hazardous effects; further, additional hazardous substances may be produced, or hazardous substances in wastes might be diluted and distributed in the environment instead of being removed and destroyed in appropriate hazardous waste treatment.

Thus, measures restricting the mixing of hazardous waste are measures ensuring the safety of waste

management and the removal of hazardous substances from wastes, both generally for human health and environment in line with the general principles of Article 13 WFD, but also for occupational health and safety. Considering these aspects, the ban of mixing hazardous waste as a principle is an expression of the precautionary principle and the principle of preventive action.

Already the previous hazardous waste Directive 91/689/EEC recognized as a principle a ban on mixing of hazardous waste with the possibility of derogation; however, the wording of that provision lacked clear, enforceable criteria. As already pointed out by the Commission's proposal for a new WFD, one main aim of the new WFD is to make the mixing ban more effective and to clarify the conditions under which mixing of hazardous waste may be acceptable.

The mixing ban applies to all hazardous wastes in the sense of Article 2(2) WFD, except to hazardous wastes produced by households (Article 20). Additional specific rules for the mixing of waste oils are laid down in Article 21(1) (c) WFD.

The structure of Article 18 WFD makes clear that as a principle, mixing of hazardous waste is banned. Exceptions to this ban are possible, but do not represent the regular case. Article 18(2) WFD opens the possibility for these exceptions under certain cumulative conditions (see below).

5.2 How is the key term “mixing” to be understood, and what is the relation to the WFD terms “blending” and “dilution”?

The term “mixing” is not defined in the WFD, just as the terms “blending” (used in the framework of the treatment operation description in Annexes I and II) and “dilution” (Article 18(1) WFD) are not defined.

The BREF document on waste treatment industries⁴³ uses the definition for blending *“more for mixing liquids than for solids, unless mixing a solid into a liquid.”*

Dilution could be understood as “mixing with the aim of lowering concentration levels of hazardous agents present in the waste”.

However, these definitions are not legally binding, and in no case they must be understood as introducing separate categories to “mixing”.

Indeed, the ban on mixing of hazardous waste in Article 18(1) WFD and the requirements for derogation in Article 18(2) WFD apply irrespectively of the aggregation state of the waste in question and the motivation – if any – of the person or institution undertaking the mixing of waste. On the

⁴³ European Commission, Reference Document on Best Available Techniques for the Waste Treatments Industries (August 2006), available at http://ftp.jrc.es/eippcb/doc/wt_bref_0806.pdf.

not legally binding

basis of this understanding, “blending” and “dilution” are sub-categories of mixing for which no specific provisions are foreseen and which are mainly introduced for clarification purposes.

5.3 What cases of mixing of hazardous waste are covered by the mixing ban?

The mixing ban of Article 18(1) WFD applies to three cases: the mixing of hazardous waste with

- Other categories of hazardous waste,
- Non-hazardous waste, and
- Substances or materials.

The approach of WFD is that the mixing of hazardous waste is exhaustively banned, in line with the precautionary principle. It covers any mixing (see the exhaustive meaning of this term above chapter 5.2) of hazardous wastes with non-hazardous wastes (i.e., wastes not exhibiting any of the properties of Annex III to WFD) and any mixing of hazardous waste with any non-waste substances or materials, irrespective of the circumstances, the used technique or the intention of the waste holder. All these elements are only relevant for the question whether the preconditions for an exemption (Article 18(2) WFD) are in place and do not affect the concept of the ban as a principle.

In contrary to the two scenarios mentioned above the mixing of hazardous waste with other hazardous waste is only banned if the two wastes do not pertain to the same *category* (see for the understanding of this term below chapter 5.4).

Examples for treatment subject to the mixing ban are

- mixing of hazardous waste with non-hazardous waste prior treatment (e.g. incineration) to customize the technical properties of the waste according to the planned operation;
- Mixing contaminated soil with uncontaminated soil in order to re-use it.

5.4 How is the term “*different categories of hazardous waste*” in Article 18(1) to be understood?

The mixing of hazardous waste with other hazardous waste is only banned if the two wastes do not pertain to the same *category*.

The term “categories of waste” is referred to in the WFD without being used in a uniform sense. In Article 2(4), reference is made to certain waste streams; in Article 11(2) lit. (b), it seems that category of waste refers to an entry in EU List of Waste Decision 2000/532/EC (LOW)). Other current pieces of

EU waste legislation do not provide a clear concept what is meant either.

The reference was already included in Directive 91/689/EEC, referring to the then-Annex I to that Directive, but Annex I of Directive 91/689 was not taken over into the new WFD. However, the underlying ratio of Annex I of Directive 91/689 still may serve as a guiding principle when assessing whether hazardous wastes are of different categories. Annex I of Directive 91/689 intended to describe and categorize waste according to their nature or the activity which generated it.

Consequently, categories of hazardous wastes in the sense of Article 18(1) WFD are hazardous wastes of similar nature without regard to their origin.

Further, in line with the aim pursuit by the exhaustive ban of mixing and the underlying precautionary principle, it is obvious that any interpretation of “*different categories of hazardous waste*” must not be understood extensively. Taking in mind that Article 18(1) makes reference to the concept of “hazardous” waste defined in Article 3(2) of WFD and as complemented by Annex III to the WFD and the (*)-entries of LOW, it is recommended that waste is regarded as belonging to different categories if

- two hazardous wastes exhibit different properties of Annex III to the WFD, or
- they are classified to different *-entries of the LOW.

This approach must be applied considering whether the result actually is in line with the general attitude of the WFD towards mixing of hazardous waste. For example, one should bear in mind that the LOW is source-generated and might not always deliver appropriate results with respect to the principles of Article 13 and the safety of waste treatment. In various cases individual LOW-entries are very wide, covering a variety of waste types which certainly should not be mixed even if the properties which render it hazardous are identical from health and environmental point of view (e.g. entry 17 05 03* – soils and stones containing dangerous substances – may apply to different soils contaminated with different pollutants).

In all cases where this approach does not always lead to appropriate results taking in mind the rationale of the mixing ban, the approach can be complemented / adjusted by considerations with respect to the rationale of Article 18(1) WFD as outlined above.

5.5 What are the conditions under which mixing of hazardous waste subject to the ban of Article 18(1) WFD may be allowed?

Article 18(2) lit. (a) to (c) WFD stipulates the requirements under which, in exceptional cases, Member States may allow mixing. The three preconditions are as follows:

- (a) the mixing operation is carried out by an establishment or undertaking which has obtained a permit in accordance with Article 23;
- (b) the provisions of Article 13 are complied with and the adverse impact of the waste management on human health and the environment is not increased; and
- (c) the mixing operation conforms to best available techniques.

The requirements have to be fulfilled cumulatively.

5.6 What are the consequences of the requirement of Article 18(2) lit.

(a) that mixing operations must only be carried out by establishments/undertaking which have obtained a permit in the sense of Article 23 WFD?

From Article 18(2) lit. (a) WFD, it can be deduced that mixing is only allowed as a purposive operation, when conducted to achieve a certain result of the operation (which itself is compliant to permit requirements and BAT requirements. From this requirement, it can be concluded that

- mixing is not allowed as a non-intentional or accidental action; any treatment operation must be conducted in a way that it is ensured that only intentional, non-accidental mixing operations are conducted
- an exemption from permit requirements (Article 24 WFD) is not applicable
- mixing during collection and transport is only allowed if collectors and carriers have obtained a permit (a registration in the sense of Article 26 WFD is not sufficient).

According to Art 23(1) (b) WFD, each type of operation (including mixing operations, see wording of Article 18(2) WFD) has to be considered in the permit. Consequently, it should be described in the permit which mixing operation is allowed. Taking in mind that traceability principle, a clear and transparent which input-waste is mixed to which output waste is required which should be reflected in the permit.

For the newly generated mixed waste, the measures related to ensure control including traceability as of Article 17 WFD do fully apply.

5.7 What criteria are addressed in Article 18(2) lit. (b) WFD when stipulating that “the provisions of Article 13 are complied with and the adverse impact of the waste management on human health and the environment is not increased”?

Article 18(2) lit. (b) WFD sets criteria which reflect minimum standards for the impacts of mixing operations with respect to

- human health and the environment in general as well as
- the protected objects water, air, soil, plants, animals etc. listed in Article 13 WFD.

E.g. diluting hazardous substances into recycled products would increase adverse environmental impacts.

By referring to “waste management” (see Article 2(9) WFD) rather than to the mixing operation only, possible impacts of the mixing beyond the operation and the facility are addressed. Including the general principle of Article 13 WFD and additionally requiring that adverse impacts are not increased, all possible adverse environmental and health impacts from the perspective of the precautionary principle might be subject to an assessment under Article 18(2) lit. (b) WFD.

The impact of Article 13 WFD is not always obvious due to the general impact of this provision. As a starting point, it should be kept in mind that the content of Article 13 WFD is identical to that of Article 4 of Directive 2006/12/EC; any case law which was under ruled in interpretation of Article 4 may be still be consulted for future decisions. Specifically for the case of mixing of hazardous waste, it can be deducted that –as a minimum and without prejudice to further concrete decisions – mixing of waste must not be allowed if the main characteristics of the wastes to be mixed, the impacts of the chemical reaction or the main characteristics of the output of the mixing operation are not exactly known.

Adverse impact of the waste management on human health and the environment must not be increased. Evidence for an increase of this impact is e.g. if the total volume or the extent of hazardousness of the generated waste is increased in comparison with the input waste/material.

5.8 How to assess BAT for mixing waste as addressed in Article 18(2) lit. (c) WFD?

BAT is defined in Article 2(20) WFD with a reference to the IPPC Directive⁴⁴) and therefore BAT is defined within the BREFs elaborated in the Sevilla process. In the absence of clear guidance in these documents, BAT has to be assessed considering the state of the art of waste technology.

5.8.1 BREF Waste treatment industry

Useful – although very general – remarks for the mixing of waste can be found in the BREF on waste treatment industries⁴⁵.

The following are from the BAT document section on techniques to consider in the determination of BAT:

- “Mixing must be prevented from leading to any of the wastes to be mixed being treated or processed to a lower quality level than is desirable”.

The BAT document also requires that mixing and blending is permitted under waste legislation.

In relation to mixing or blending, BAT for waste treatment is the following:

“to have and apply mixing/blending rules oriented to restrict the types of wastes that can be mixed/blended together in order to avoid increasing pollution emission of down-stream waste treatments. These rules need to consider the type of waste (e.g. hazardous, non- hazardous), waste treatment to be applied as well as the following steps that will be carried out to the waste output”.

5.8.2 BREF waste incineration

The BREF document for incineration considers whether or not mixing is allowed and under what conditions it should be carried out. The following are from the BREF document section on techniques to consider in the determination of BAT:

- *“Techniques used for waste pretreatment and mixing are wide ranging, and may include: mixing of liquid hazardous wastes to meet input requirements for the installation” (sect. 4.1.5.1)*

⁴⁴IPPC Directive 2008/1/EC is repealed with effect of 7 January 2014 by new IE Directive 2010/75/EU. References to IPPC Directive will be construed as references to IE Directive following Article 81(3), Annex X to IE Directive.

⁴⁵ European Commission, Reference Document on Best Available Techniques for the Waste Treatments Industries (August 2006), available at http://ftp.jrc.es/eippcb/doc/wt_bref_0806.pdf.

- *“The pretreatment of liquid packaged waste and packed or bulk solid waste to produce a mixture for continuous feed to the furnace can be carried out.” (sect 4.1.5.3)*

In relation to mixing, BAT for waste incineration is the following:

- *“8. The segregation of the storage of wastes according to a risk assessment of their chemical and physical characteristics to allow safe storage and processing, as described in 4.1.4.5.”*
- *“11. The mixing (e.g. using bunker crane mixing) or further pretreatment (e.g. the blending of some liquid and pasty wastes, or the shredding of some solid wastes) of heterogeneous wastes to the degree required to meet the design specifications of the receiving installation (4.1.5.1). When considering the degree of use of mixing/pretreatment it is of particular importance to consider the cross-media effects (e.g. energy consumption, noise, odour or other releases) of the more extensive pretreatments (e.g. shredding). Pretreatment is most likely to be a requirement where the installation has been designed for a narrow specification, homogeneous waste.”*
- *“The use of a suitable combination of the techniques and principles described in 4.6.1 for improving waste burnout to the extent that is required so as to achieve a TOC value in the ash residues of below 3 wt % and typically between 1 and 2 wt %, including in particular:
...
c. the use of techniques for mixing and pretreatment of the waste, as described in BAT 11, according to the type(s) of waste received at the installation.”*

In relation to mixing, BAT for hazardous waste incineration is the following:

- *“the mixing, blending and pretreating of the waste in order to improve its homogeneity, combustion characteristics and burn-out to a suitable degree with due regard to safety considerations. Examples are the shredding of drummed and packaged hazardous wastes, described in 4.1.5.3 and 4.1.5.6.”*

not legally binding

Annex 1: Legal acts cited in the document

Note that repealed Legal acts are marked with an asterisk (*)

Citation	Full reference	Link
WFD	Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3),	http://eur-lex.europa.eu/Notice.do?val=483340:cs&lang=en&list=522727:cs,495628:cs,483340:cs,464230:cs,464043:cs,&pos=3&page=1&nbl=5&pgs=10&hwords=
	Council Regulation (EU) No 333/2011 of 31 March 2011 establishing criteria determining when certain types of scrap metal cease to be waste under Directive 2008/98/EC of the European Parliament and of the Council (OJ L 94, 8.4.2011, p. 2)	http://eur-lex.europa.eu/Result.do?T1=V1&T2=2011&T3=33&RechType=RECH_naturel&Submit=Suche
	Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on waste (OJ L 114, 27.4.2006, p. 9)*	http://eur-lex.europa.eu/Notice.do?val=425607:cs&lang=en&list=437407:cs,425607:cs,420249:cs,419984:cs,&pos=2&page=1&nbl=4&pgs=10&hwords=
List of waste / LOW	2000/532/EC: Commission Decision of 3 May 2000 replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste (notified under document number C(2000) 1147) (OJ L 226, 6.9.2000, p. 3)	http://eur-lex.europa.eu/Notice.do?val=236655:cs&lang=en&list=236655:cs,237750:cs,&pos=1&page=1&nbl=2&pgs=10&hwords=
	Council Directive 91/689/EEC of 12 December 1991 on hazardous waste (OJ L 377, 31.12.1991, p. 20)*	http://eur-lex.europa.eu/Notice.do?val=172978:cs&lang=en&list=225578:cs,172978:cs,&pos=2&page=1&nbl=2&pgs=10&hwords=
Waste Shipment Regulation	Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste (OJ L 190, 12.7.2006, p. 1)	http://eur-lex.europa.eu/Notice.do?val=519357:cs&lang=en&list=519357:cs,507018:cs,&pos=1&page=1&nbl=2&pgs=10&hwords=
Landfill Directive	Council Directive 1999/31 of 26 April 1999 on the landfill of waste (OJ L 182, 16.7.1999, p. 1), , last amended by Regulation (EC) No 1137/2008 of the European Parliament and of the Council of 22 October 2008 (OJ L 311, 21.11.2008, p. 1)	http://eur-lex.europa.eu/Notice.do?val=487115:cs&lang=en&list=487115:cs,234135:cs,&pos=1&page=1&nbl=2&pgs=10&hwords=
Waste incineration Directive	Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste (OJ L 332, 28.12.2000, p. 91)	http://eur-lex.europa.eu/Notice.do?val=172978:cs&lang=en&list=225578:cs,172978:cs,&pos=2&page=1&nbl=2&pgs=10&hwords=
WEEE Directive	Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE) (OJ L 37, 13.2.2003, p. 24), last amended by Directive 2008/112/EC of the European Parliament and of the Council of 16 December 2008 (OJ L 345, 23.12.2008, p. 68),	http://eur-lex.europa.eu/Notice.do?val=283952:cs&lang=en&list=481621:cs,454034:cs,283952:cs,272350:cs,&pos=3&page=1&nbl=4&pgs=10&hwords=
REACH Regulation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council	http://eur-lex.europa.eu/Notice.do?val=444402:cs&lang=en&list=516890:cs,516899:cs,515837:cs,488164:cs,471644:cs,449533:cs,444402:cs,&pos=7&page=1&nbl=7&pgs=10&hwords=

	Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ L 396, 30.12.2006, p. 1)	
PCB / PPCT Waste Directive	Council Directive 96/59/EC of 16 September 1996 on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT) (OJ L 243, 24.9.1996, p. 31)	http://eur-lex.europa.eu/Notice.do?val=344406:cs&lang=en&list=344406:cs,343775:cs,344527:cs,&pos=1&page=1&nbl=3&pgs=10&hwds=
	Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations (OJ L 204, 21.7.1998, p. 37)	http://eur-lex.europa.eu/Notice.do?val=226506%3Acs&lang=en&list=226506%3Acs%2C225780%3Acs%2C226789%3Acs%2C&pos=1&page=1&nbl=3&pgs=10&hwds=
Packaging Directive	European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste (OJ L 365, 31.12.1994, p. 10)	http://eur-lex.europa.eu/Notice.do?val=302037:cs&lang=en&list=302037:cs,&pos=1&page=1&nbl=1&pgs=10&hwds=
ELV Directive	Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of life vehicles (OJ L 269, 21.10.2000, p. 34)	http://eur-lex.europa.eu/Notice.do?val=236993:cs&lang=en&list=236993:cs,240084:cs,237275:cs,&pos=1&page=1&nbl=3&pgs=10&hwds=
Batteries Directive	Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC (OJ L 266, 26.9.2006, p. 1)	http://eur-lex.europa.eu/Notice.do?val=433535:cs&lang=en&list=449551:cs,449550:cs,436788:cs,435685:cs,433535:cs,421715:cs,420364:cs,&pos=5&page=1&nbl=7&pgs=10&hwds=
Mining Waste Directive	Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC - Statement by the European Parliament, the Council and the Commission (OJ L 102, 11.4.2006, p. 15)	http://eur-lex.europa.eu/Notice.do?val=424935:cs&lang=en&list=467047:cs,443494:cs,442465:cs,424935:cs,420087:cs,&pos=4&page=1&nbl=5&pgs=10&hwds=
POPs Regulation	Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC (OJ L 158, 30.4.2004, p. 7)	http://eur-lex.europa.eu/Notice.do?val=387315:cs&lang=en&list=453621:cs,392465:cs,387316:cs,387315:cs,&pos=4&page=1&nbl=4&pgs=10&hwds=
	Regulation (EC) No 1774/2002 of the European Parliament and of the Council of 3 October 2002 laying down health rules concerning animal by-products not intended for human consumption (OJ L 273, 10.10.2002, p. 1), to be repealed from 4 March 2011 by	http://eur-lex.europa.eu/Notice.do?val=275247:cs&lang=en&list=466113:cs,442717:cs,275247:cs,501924:cs,&pos=3&page=1&nbl=4&pgs=10&hwds=
ABP Regulation	Regulation (EC) No 1069/2009 of the European Parliament and of the Council of 21 October 2009 laying down health rules as regards animal by-products and derived products not intended for human consumption and repealing Regulation (EC) No 1774/2002 (Animal by-products Regulation) (OJ L 300, 14.11.2009, p. 1)	http://eur-lex.europa.eu/Notice.do?val=503920:cs&lang=en&list=503920:cs,&pos=1&page=1&nbl=1&pgs=10&hwds=
Urban waste water Directive	Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment (OJ L 135, 30.5.1991, p. 40)	http://eur-lex.europa.eu/Notice.do?val=172885:cs&lang=en&list=172885:cs,&pos=1&page=1&nbl=1&pgs=10&hwds=
IPPC Directive	Directive 2008/1/EC of the European Parliament and of the Council of 15 January 2008 concerning integrated pollution prevention and control (Codified version) (OJ L 24, 29.1.2008, p. 8)	http://eur-lex.europa.eu/Notice.do?val=463847:cs&lang=en&list=463847:cs,462522:cs,462428:cs,&pos=1&page=1&nbl=3&pgs=10&hwds=
IED Directive	Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (OJ L 334, 17.12.2010, p. 17)	http://eur-lex.europa.eu/Result.do?T1=V1&T2=2010&T3=75&RechType=RECH_naturel&Submit=Search
Water Framework Directive	Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of	http://eur-lex.europa.eu/Notice.do?val=237000:cs&lang=en&list=465959:cs,425605:cs,258162:cs,237000:c

not legally binding

	water policy (OJ L 327, 22.12.2000, p. 1)	s,236223:cs,237282:cs,&pos=4&page=1&nbl=6&pgs=10&hwords=
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Annex 2: CJEU case law cited in the document

Case	Date	Parties	Link
Joined cases C-206/88 and C-207/88	28.05.97	Zanetti and Vesso	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:61988J0206:EN:HTML
Joined cases C-304/94, C-330/94, C-342/94 and C-224/95	25.06.97	Tombesi et al	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:61994J0304:EN:HTML
Joined cases C-418/97 and C-419/97	15.06.00	ARCO Chemie Nederland Ltd v Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer et al (ARCO)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:61997J0418:EN:HTML
C-6/00	27.02.02	Abfall Service AG (ASA) v Bundesminister für Umwelt, Jugend und Familie (ASA)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62000J0006:EN:HTML
C-9/00	18.04.02	Palin Granit Oy and Vehmassalon kansanterveystyön kuntayhtymän hallitus (Palin Granit Oy)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62000J0009:EN:HTML
C-228/00	26.09.02	Commission of the European Communities v Federal Republic of Germany (Belgian Cement kilns)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62000J0228:EN:HTML
C-116/01	03.04.03	SITA EcoService Nederland BV, formerly Verol Recycling Limburg BV v Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer (SITA)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62001J0116:EN:HTML
Case C-444/00	19.06.03	The Queen on the application of Mayer Parry Recycling Ltd v Environment Agency and Secretary of State for the Environment, Transport and the Regions (Mayer Parry)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62000J0444:EN:HTML
Case C-114/01	11.09.03	Proceedings against AvestaPolarit Chrome Oy, formerly Outokumpu Chrome Oy (Avesta Polarit)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62001J0114:EN:HTML
C-457/02	11.11.04	Niselli	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62002J0457:EN:HTML
C-1/03	07.09.04	Paul Van de Walle and Others v Texaco Belgium SA (van de Walle)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62003J0001:EN:HTML
C-121/03	08.09.05	Commission of the European Communities v Kingdom of Spain (Manure Case)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62003J0121:EN:HTML
C-176/05	01.03.07	KVZ retec GmbH v Republik Österreich (KVZ)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62005J0176:EN:HTML
C-252/05	10.05.07	Thames Water Utilities Ltd v South East London Division, Bromley Magistrates' Court (Thames Water)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62005J0252:EN:HTML
C-188/07	24.06.08	Commune de Mesquer v Total France SA (Commune de Mesquer)	http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:62007J0188:EN:HTML