

EC Waste Law or How to Juggle with Legal Concepts

Drawing the Line between Waste, Residues, Secondary Materials, By-Products, Disposal and Recovery Operations

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I. Introduction

The definition laid down in Directive 75/442/EEC on waste has proved to be of particular importance because Directive 75/442/EEC, as amended by Directive 91/156/EEC, has been elevated to the status of Framework Directive and has underpinned, since 1993, the whole of the Community's policy on waste¹. Thus the definition of the concept of waste constitutes the keystone of all sectoral regulation on waste products, including the Community rules pertaining to the trans-frontier movement of waste². Essentially, any substance or object that is discarded but, in the light of the particular circumstances does not fall under this definition, is not subject to the administrative obligations relating to collection, sorting, storage, transportation, international transfer and treatment methods that are applicable to waste.

In order to evade the Caudine Forks of waste regulation, including the financial burden of waste transfer (taxes, levies), some economic operators have not hesitated to qualify their residues as either products or by-products. The Community definition has thus lain at the root of various controversies in nearly every Member State where national authorities and public officials cross swords with business on the issue of whether such and such a residue constitutes waste or not. Against this background the ECJ has been trying, for a number of years, to elaborate this definition according to clear and concrete criteria. Familiarity with this jurisprudence is of great benefit for national lawyers, as any clarification handed down by the ECJ in a case brought against a Member State is of a priori theoretical interest for all the other Member States.

The basic problem associated with defining waste stems from the fact that the concept cannot be properly understood without an appreciation of the scope of a number of other concepts.

Accordingly, the first part of the article, will attempt to distinguish between the concepts of waste, secondary raw materials and by-products.

The third section of the article will address the concepts of recovery and disposal. The scope of these operations has been dogged by controversy for a number of reasons. Of particular importance is that recovery and disposal operations are subject to different administrative requirements, in particular regarding the prior issue of a permit by the competent authority (Directive 75/442/EEC, Article 10). Furthermore, the concepts of recovery and disposal are essential to ensure the supervision of transfrontier movements of waste in line with the procedures provided for under Regulation 259/93/EEC on the supervision and control of shipments of waste within, into and out of the European Community. This Regulation effectively adopts identical definitions by referring to the annexes of the Framework Directive³. As a result, the classification of an operation either as a recovery or a disposal operation has significant legal implications in the field of waste management.

It should be stressed from the outset that, whereas the EC Commission is unwilling to envisage any changes to the definition of waste and disposal, its first draft of a proposal for a directive on waste

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1 This is a framework directive setting out the general principles in this area (Case C-114/01 – AvestaPolarit Chrome Oy [2003] ECR, para. 48).

2 The EC Commission Communication on the Prevention and Recycling of Waste of 27 May 2003 highlights that the definition is the keystone of waste legislation (p. 38). Consequently, changes to this definition are likely to affect an array of legislative instruments, and as such must be consistent with the objectives of all of them, and also with the principles of legal certainty and legitimate expectations.

3 This Regulation will be modified in the near future. See Council common position 15311/4/2004.

entails major changes with respect to the definition of recovery operations. Given that this is a first draft and not yet published in the Official Journal, no attempt will be made here to comment on these proposals.

II. The definition of waste

1. The scope of the definition: framing the issues

The notion of waste is difficult to specify for the following reasons. There are first of all various types of waste. In one way or another, all sectors of our consumer society produce waste, and the numerous regulations which define it reflect this diversity. National regulations refer, often in an uncoordinated manner, to "industrial waste", "household waste", "hospital waste", "agricultural waste", "mineral waste" and "special waste". Since some of them are more dangerous than others, legislators have also come to distinguish between "dangerous and toxic waste" and "ordinary waste".

Furthermore, the concept of waste is variable because the development of different types of waste is far from homogeneous. On the account of the dynamic and non-static processes, the time factor is crucial in this respect. Household waste, for instance, disappears quickly because it is biodegradable while, in contrast, the life span of other wastes – in particular nuclear waste – stretches to millennia. Treatment and disposal processes can also, where appropriate, play a decisive role. The various ways in which waste both manifests itself and is disposed of differ markedly. Solid wastes are incinerated and thereby dispersed into the atmosphere in the form of polluting particles, liquid waste dissolved into a water body is discharged in the form of polluting effluents. However, they could all easily take the place of raw materials through recycling and further integration into production processes. It goes without saying that the choice of medium here has important consequences for the protection of the environment. The dispersal of waste into the air, water and soil

can alter the affected ecosystems (atmospheric pollution, contamination of soil and aquifers, water eutrophication...) whereas their reclamation for the production of secondary raw materials proves to be less damaging for the environment and, moreover, allows for savings on raw materials.

Finally, waste is characterised by its relativity. An object that may appear "unusable" at any given time, in a particular place and for a particular person, is not necessarily so in another place, at another time and for another person. This can be illustrated by example: an old jacket no longer satisfies its owner who is happy to discard it. Were the jacket to be retained by a third party who continued to wear it, it would not be a waste product. On the other hand, if no new wearer could be found, its owner would have to get rid of it as a piece of rubbish. Using analogous reasoning, a substance can at different stages in its life cycle be qualified alternatively as a product, by-product, waste or secondary raw material according to the use that is made of it or under the applicable law. Thus for a given company, a residue can within the space of a year, or even several months, cease to be classified as waste either due to technical advancements or for economic reasons where an increase in the price of raw materials renders secondary raw materials more competitive.

Since the concept of waste fluctuates according to place, time, circumstances and the people involved, it would at first sight appear to escape any uniform legal classification.

In addition, can the everyday understanding of the concept of waste throw any light on the Community definition? The everyday notion of this term, however, proves to be of little help. Putting to one side problems deriving from the variety of official languages of the European Community, the term "waste" is polysemic in every language. It is in fact understood differently both in daily parlance and scientific literature. Even though it is beyond doubt that the term is evocative of some kind of diminished utility, dictionary definitions are not particularly enlightening as to its precise scope. Thus, waste is defined in a relatively vague manner as: "unwanted matter or material of any type, often that which is left after useful substances or parts have been removed"⁴, "no longer useful and to be thrown away"⁵ or "eliminated or thrown aside as worthless after the completion of a process"⁶. Such definitions are of minimal use for lawyers.

4 Cambridge International Dictionary of English, Cambridge 1995.

5 Oxford Advanced Learner's Dictionary, Oxford 1989.

6 The Shorter Oxford English Dictionary, 3rd ed., Oxford 1956.

2. The act of "discarding"

There is a need to analyse carefully Article 1 of Council Directive 75/442/EEC on waste as amended by Directive 91/156/EEC, which defines waste as: any substance or object in the categories set out in Annex 1 which the holder discards or intends or is required to discard. It should be pointed out, at the outset, that the term "discard" is the lynchpin around which the whole definition has been conceived. This calls for a thorough analysis of the ambit of this term.

a. The key role of the concept of "discarding"

According to Article 1(a) of the Directive, any substance or object in the categories set out in Annex 1 is to be considered as waste, provided that "the holder discards or intends or is required to discard" it. Repeated three times, the verb "to discard" occupies a central place in this definition⁷. In other words, the scope of the applicability of the concept of waste and, by extension, of both Community and national rules, depends on the meaning given to this term.

However, Community legislation has avoided specifying what precisely is meant by this term. Moreover, various general questions arise in connection with the scope of the meaning of the verb "to discard". Alongside traditional meanings such as getting rid of, abandoning, throwing away, rejecting, the term "to discard" is also taken in current thinking to embrace sale⁸. Furthermore, the concept of "getting rid of" waste can be understood in two ways. In its most obvious sense, this act refers to the rejection of an object that has become useless, cumbersome or unwanted. In this case the object falls outside any commercially viable process. Abandoned, rejected, dumped, this object can generate nuisances or cause pollution. In a more derivative sense, the act of discarding also has a commercial dimension. Even where it is not dumped illegally, the waste, which may have either a negative or a positive value, can be the object of commercial transactions without thereby ceasing to be classified as such.

By incorporating the term "to discard" into the definition of waste, Community law has attempted not only to preclude the dumping of waste but also to intervene in the disposal and recovery procedures of residues with a view to guaranteeing an

optimal utilisation of natural resources. This twin-track approach draws inspiration from the objectives enshrined in Article 174(1) EC, which envisages Community action in the field of environmental protection both in terms of the fight against pollution and the rational utilisation of natural resources. This means that Community regulation tends to create new markets by encouraging the recovery of waste in order to extract secondary raw materials (Article 3(1)(b)). An appreciation of this point appears to be essential for a correct understanding of the relatively broad reach of the concept of waste.

b. The term "discard" can be understood in three different ways.

The term "discard" constitutes a core element of the definition of waste and can be understood in three different ways.

First hypothesis: the holder discards the substance or object

The first limb of the definition relates to the action of "discarding" the waste. This action can be understood from two completely different viewpoints, on the one hand, waste can be defined by means of an intrinsic approach founded on objective elements whilst, on the other hand, recourse to more subjective elements allows for the development of an extrinsic approach. This calls for a few words of explanation.

First of all, the intrinsic approach refers to the process of the material transformation of a product or substance into waste. It allows for the qualification of the waste in objective terms, such as the constituent elements of the substance or their particular characteristics. This means that waste containing particular metals or displaying particular poisonous properties can be classed as dangerous on the basis of these characteristics. In most cases the

7 ECJ, Case C-129/96 – Inter-Environnement Wallonie ASBL & Région wallonne [1997] ECR I-7411, para. 26; Joined Cases C-418/97 & C-419/97 – ARCO Chemie [2000] ECR I-4475, para. 36.

8 The English High Court has noted that the term "to discard" does not appear in Article 4 of the Directive, the provision outlawing the dumping of waste. The court found that this was a supplementary indication that the meaning of the term "to discard" was not limited to the abandonment, dumping or uncontrolled disposal of waste (*Castle Cement v The Environment Agency*, unreported, 22 March 2001, para. 27).

objective determination that the physico-chemical characteristics of a substance render it unusable is relatively straightforward.

Through this objective interpretation, the law on waste has tended to superimpose itself on regulations covering pollution, nuisances and hazards, which include a plethora of threshold levels. Accordingly, a dangerous substance can be subject to regulation both on the grounds of its toxicity under the legislation on dangerous substances and, where it is no longer needed in order to meet technological or market requirements, under the rules on dangerous waste.

The invocation of objective elements however varies significantly, with the Directive's 15 Appendix I categories covering markedly different situations, from the production stage (categories Q1, Q8, Q9, Q10 & Q11) right through to the consumption stage (expired products, products unfit for consumption). Moreover, many objects which do not represent any particular danger on account of their physico-chemical composition or of their particular characteristics (waste plastics, biological waste), must nonetheless fall under the law on waste because of the nuisance they may cause when they end up outside controlled management procedures.

Therefore, in the absence of a wholly satisfactory objective interpretation of the concept of waste, a subjective element should be introduced into the definition, involving an analysis of the holder's intention. This is an extrinsic approach where a substance can be classed as waste not simply on the basis of its origin, composition or physico-chemical characteristics, but rather according to the use (or non-use) to which it is put.

This dual approach, derived from the term "to discard", locates within the definition of waste both substantive and functional dimensions, although these are not always compatible with one another. It is therefore necessary to consider when a holder has an intention or obligation to discard an object.

Second hypothesis: the holder has the "obligation to discard" the substance or object

When the holder of a substance or object is required to discard a material, substance or product,

that substance or object will be classed as waste. This classification operates independently of any possibility of re-use of the object by the holder. The regulations which oblige holders to discard an object are in essence founded on the intrinsic approach discussed above. They are relevant examples in illustrating this second approach.

Our first example can be drawn from Community law. Directive 75/439/EEC on the disposal of waste oils defines them as "any mineral-based lubrication or industrial oils which have become unfit for the use for which they were originally intended"⁹. After the oil has become unfit, i.e. after it can no longer be used as a lubricant, it must be handed over to an authorised collector unless it can be recycled by the user. Since it is impossible for the oil to be used in the normal manner, it counts as waste and nothing else. Further examples can be provided of national rules stipulating that wrecked cars, animal carcasses and expired pharmaceutical products be treated as waste. The classification as waste, in these three cases, depends, respectively, on the particular circumstances of the abandonment of the car, the state of decomposition of the body and the expiry date of the medicine. Finally, it is possible to infer from the obligation to decontaminate polluted soils, whether derived from a rule of administrative law or a civil law obligation, that the land can no longer be used as it previously was, and is therefore subject to waste regulations¹⁰. It is certain that intention does not play any role in this classification framework.

Third hypothesis: the holder has the "intention to discard" the substance or object

The express inclusion of the criterion of intention in the Community definition avoids several problems. In the absence of this criterion, it could be alleged that particular objects or substances could not be classified as waste, even where they displayed all the required characteristics, because they were neither under the control of the relevant person, nor was that person obliged to discard them. Thus, for example, unscrupulous economic operators could accumulate objects on their land over the years in conditions which were unjustifiable from the point of view of environmental protection, all the time maintaining that they were not waste because the objects had not been discarded and the operator was under no obligation to discard. An express reference to intention to discard was there-

⁹ Article 1(a) of Directive 75/439/EEC on the Disposal of Waste Oils, as amended by Directive 87/101/EEC.

¹⁰ Advocate General Kokott's Opinion in Case C-1/03 – *Ministère public v Van de Walle*.

fore included in the Community legislation precisely in order to thwart such fraudulent schemes.

The intention to abandon substances is, accordingly, imputed from the inability to point to a legally admissible use of the production residues (for example, due to the depositing of residues for an indefinite period)¹¹. The interesting point is that the Community regime permits an inference of the intention to evade the controlled management of the waste from the holder's objective behaviour. In other words, the holder of a substance "has the intention to discard" when it is clear from the particular circumstances that he or she does not intend to use it as a product or a raw material. The burden of proving that the holder has the intention to discard the waste lies, naturally, with the State authorities.

c. Interpretating discarding broadly

The term waste must be interpreted in the light of the objectives of the Directive¹², which refers to Article 174(2) EC guaranteeing "a high level of protection" of the environment, corresponding with the obligation set out in Article 4 of the Directive¹³. In addition, the policy of waste management is founded on the principles of precaution and preventive action.

It follows that Member States cannot interpret the notion of waste in a restrictive manner. They cannot therefore exclude any categories of recyclable waste from the scope of their regulations on waste¹⁴. Similarly, a strict interpretation of the definition precludes any legal assumptions that would have the effect of limiting the application of the Directive by not covering some materials, substances or products falling under the definition of "waste" within the meaning of the Directive. Such restrictions would undermine the effectiveness both of Article 174 EC and that of the Directive¹⁵.

3. Waste classification criteria

a. Introductory note

Although it has not managed to develop an exhaustive definition of waste¹⁶, the ECJ has nevertheless set out, in a string of cases, several criteria that can be applied by administrative authorities in order to determine whether a substance or object falls under the Community definition of waste:

- i) The concept of waste should be interpreted broadly on the basis of the objectives pursued by Community legislation, the need to render the Directive efficacious and general principles of environmental law (above section II.2.c);
- ii) The concept of waste can only be understood in conjunction with that of discarding (above, section II.2)¹⁷;
- iii) The application of the concept of discarding implies that all the "circumstances" indicating whether the holder has the intention or obligation to discard be taken into consideration (below, section II.3.b)¹⁸.

The following paragraphs will address this last issue which has, in practice, turned out to be of paramount importance. The existence of waste for the purposes of the Framework Directive must in fact be verified in the light of all the relevant circumstances¹⁹; in other words, in the light of a number of factors (section II.3.b). In outlining these factors it is necessary, as has already been stressed, to bear in mind the objective of Directive 75/442/EEC and ensure that its efficacy is not compromised. Second, the different arguments for avoiding regulation generally advanced by the holders of waste will be considered (section II.3.c).

b. Factors to be taken into consideration

The following sub-sections will identify those criteria – some of which were briefly sketched out in our previous article²⁰ – that can be used to classify an

11 Opinion of Advocate General Jacobs in C-9/00 – *Palin Granit Oy* [2002] ECR I-3533, para. 34.

12 ECJ, Joined Cases C-206/88 & C-207/88 – *Vessoso & Zanetti* [1990] ECR I-1461, para.12; *ARCO Chemie*, supra note 7, para. 37.

13 *ARCO Chemie*, supra note 7, para.40; *Palin Granit Oy*, supra note 11, para. 23.

14 ECJ, Case C-422/92 – *Commission v Germany* [1995] ECR I-1097.

15 *ARCO Chemie*, supra note 7, para. 42.

16 In his Opinion in the *ARCO Chemie* Case, supra note 7, Advocate General Alber stated that "the definition of the term 'waste' ... is too vague to provide a generally valid, comprehensive definition of waste" (para. 109). The ECJ has itself never given a complete definition of the concept.

17 *Inter-Environnement Wallonie*, supra note 7, para. 26; *ARCO Chemie*, supra note 7, para. 36.

18 *ARCO Chemie*, supra note 7, paras. 73, 88 and 97; Case C-9/00 – *Palin Granit Oy* [2002] ECR I-3533, para. 24.

19 *ARCO Chemie*, supra note 7, para. 88.

20 De Sadeleer, "Waste, Products and By-products", JEEPL 2005, pp. 46-58.

object as waste. This analysis makes no claim to exclusivity since the criteria are merely indicative. Taken in isolation, it is not possible to conclude from them whether a given substance falls under the definition of waste or not²¹. No a priori preference can be given to any one criterion over another, but rather the criteria must be applied on a case-by-case basis in the light of the particular circumstances.

The types of treatment which can be used to dispose of waste listed in Annexes II A and II B of the Directive

It has been noted above that it is difficult to give any precise guidance on the meaning of the term „to discard“. Faced with this impasse, some have been tempted to interpret this term in the light of the disposal and recovery operations listed in Annexes II A and II B of the Directive (see below Table 1, page 472). Since any waste produced must be managed, it must either be disposed of or recovered (Articles 5 and 8)²². It is clear from Article 4 and the two Annexes outlining practical disposal and recovery operations, that the term “discard” embraces, in particular, both the disposal and recovery of a substance or object²³.

From the moment a substance becomes subject to a disposal or recovery operation under Annex II of the Directive, or an analogous operation, there is

the presumption that the relevant object constitutes waste, even where it is destined for re-use. The ECJ has thus held that deactivation processes intended merely to render waste harmless, landfill tipping in hollows or embankments and waste incineration constituted disposal or recovery operations within the meaning of Directive 75/442/EEC²⁴.

Furthermore, the fact that the holder uses a type of treatment, which is commonly used to get rid of waste, is an additional indication of his or her intention to discard it. For example, if the use of a substance as a fuel is a common means of disposal or recovery of waste, then this fact may in itself establish the existence of an act of discarding, an intention or obligation to discard the fuel within the meaning of Article 1(a) of the Directive²⁵. A national judge must therefore take into consideration such factors when reaching a decision on the classification of waste²⁶.

However, even though the method of treatment or the means of use of a substance may be indicative of an intention by or obligation on the holder to discard, this factor is not decisive. According to the Court, the mere fact that a product or substance is subject to recovery using an Annex II method does not lead to the conclusion that the thing is waste²⁷. In the same way, the location and the length of time for which waste is kept have no bearing on the classification of the residues²⁸. It is further necessary to consider whether the holder has the intention or obligation to get rid of the substance.

Such caution is necessary both on theoretical and practical grounds

First of all, any desire to link the definition of waste with the content of the Annexes runs into considerable practical difficulties. Though describing disposal and recovery methods²⁹ (see below, section IV.1.b), Annexes II A and II B can in fact, when read in the most abstract sense, be taken to apply to raw materials that are not waste. Thus, category R9 of Annex II B, entitled “Oil refining and other reuses of oil”, can apply to oil, natural gas or kerosene, whilst category R10, entitled “Land treatment resulting in benefit to agriculture or ecological improvement”, can cover both fertiliser and slurry.

From a less ancillary point of view, the absence of an automatic relationship between an Annex II waste management operation and the definition of waste can be explained in terms of the different

21 Case C-235/02 – Saetti Order, 15 January 2004.

22 As discussed below in the fourth section, the concepts of “disposal” and “recovery” enshrined in Directive 75/442/EEC determine which procedure has to be applied pursuant to Regulation 259/93/EEC on the supervision and control of shipments of waste within, into and out of the EC. See in particular the following decisions: Cases C-6/00 – A.S.A. Abfall Service AG c. Bundesminister für Umwelt, Jugend und Familie (2002); C-116/01 – Sita Eco service Nederland (2003); C-228/00 – Commission v Germany (2003); C-458/00 – Commission v Luxembourg (2003); C-113/02 – Commission v Nederland (2004).

23 Inter-Environnement Wallonie, supra note 7, paras. 25 and 26.

24 Joined Cases C-304/94, C-330/94, C-342/94 & C-224/95 – Tombsi [1997] ECR I-3561.

25 ARCO Chemie, supra note 7, paras. 69 and 73. However, the fact that the burning of a residue (petroleum coke) is a standard waste recovery method is not relevant since the purpose of a refinery producing this residue is precisely to produce different types of fuel (C-1/03 – Saetti Order, 15 January 2004, para. 46).

26 The fact that rusty materials are stored in one of the listed installations included in the nomenclature of waste recovery and metal storage activities has led the French Cour de Cassation to find that the Court of Appeal had correctly classed the material as waste (Cass. crim., 1 February 1995).

27 Palin Granit Oy, supra note 11, para. 30.

28 Ibid., para. 42.

29 Ibid., paras. 49, 51 and 82.

objectives pursued by the two regimes. On the one hand, the definition of the concept of waste is intended to cover all objects and substances on account of the dangers inherent in their abandonment, irrespective of whether the waste is treated within the context of an authorised operation or not. On the other hand, Annexes II A and II B provide a unified summary of operations which must be subject to minimal security requirements. As far as the principle of subsidiarity is concerned, Member States may also subject waste management operations other than those listed in Annex II to authorisation and control procedures.

Finally, a definition that rested entirely on the methods used and more closely on the distinction drawn between recovery and production of a product would raise serious conceptual difficulties. There is a fundamental difficulty in using the concept of recovery because it is not exhaustively defined in the Directive. As noted by Advocate General Jacobs, an element of circularity would be at work here and the question as to whether there is a recovery operation for the purposes of the Directive would depend on whether there is waste, which in turn would depend upon whether there is a recovery operation³⁰.

The recovery or disposal of waste as a financial burden for the holder

The absence of an economic benefit can constitute a supplementary criterion to that of the nature of the treatment³¹. This is particularly important where the holder of waste tries to get rid of the substance because it no longer has any economic value. In order to do this, the holder has to pay a specialist company to take care of the collection, transportation and the final treatment of the waste. In the *Palin Granite Oy* case, the ECJ held that, since the only foreseeable use of leftover stone in its existing state would involve a financial burden for the operator, this waste was to be considered as a residue which the operator had either the intention or obligation to discard³².

This second criterion is not, however, decisive. Even where the waste has a positive economic value it may still be subject to waste regulations.

Residual substances from the process of manufacture of another substance

The Directive does not define the residue as anything more than waste. Although residues are not

expressly covered by the Annex II B recovery operations, they receive several mentions in Annex I (Q1, Q5 & Q8-11). A residue may be defined as the product left over at the end of the production process which is not purposely produced in that process.

The ECJ has stressed the importance of this criterion in several judgments, finding that where the holder discards residues, this is indicative of an act, intention or obligation to discard waste³³. As it happens, the method of production of a substance may indicate whether a particular product is unwanted or not. In this respect, the fact that a material results from a production process intended to manufacture another substance may be decisive in determining its ultimate classification. Accordingly, plastic, metal, cardboard and glass residues resulting from the production process of motor vehicles must be regarded as waste because the assembly line is designed for car production and not these other materials.

The inappropriateness of the substance for the particular production process

The fact that a substance is a residue whose composition is not suitable for the use made of it, or where special precautions for the environment must be taken when it is used, tends to reinforce the conviction of the administrative authorities that it is a waste product³⁴. For example, where decommissioned mines are filled with dangerous waste, which should in fact be stored under the most stringent security conditions, this provides strong evidence that these materials are not the most suitable for filling in mines. They could in fact be replaced by more appropriate materials, such as slag, abundantly available on the pit surface. In order to determine the appropriateness of the use of mining residues as construction materials, administrative

30 Opinion of Advocate General Jacobs in *Tombesi*, supra note 24, para. 55.

31 *Tombesi*, supra note 24, paras. 47, 48 and 52.

32 *Palin Granit Oy*, supra note 11, para. 38. The same reasoning has been applied in the UK to the burning of fuel in a cement works. The fact that the owners of the fuel had been obliged to pay the cement works operators was indicative, according to the High Court of Justice, of a necessity on the part of the holders to get rid of the fuel (*Castle Cement v The Environment Agency*, supra note 8, para. 56).

33 *ARCO Chemie*, supra note 7, paras. 83-87; *Palin Granit Oy*, supra note 11, para. 33; Case C-457/02 – *Niselli*, para. 43.

34 *ARCO Chemie*, supra note 7, para. 87; *Palin Granit Oy*, supra note 11, paras. 32-37.

authorities may consider technical features such as the weight, size and shape of the materials as well as the needs of the construction sector³⁵.

Disposal as the only use for the substance

The fact that no use other than disposal can be envisaged for a substance (burial, incineration without energy reclamation) is a supplementary indication that it is waste³⁶. Thus, neither a pharmacist nor a grocer, respectively, have any interest in expired medicines or foodstuffs, and they must therefore dispose of such products. The absence of a market for them is also indicative of the fact that the substance no longer has any role to play as a consumer good.

The environmental impact of the substance or its treatment

The environmental impact of the substance or its method of treatment can be indicative of its status as waste, especially since the Directive is intended to limit the creation of nuisances (Article 4). The degree of toxicity of a substance can also be an indication of the presence of hazardous waste for the purposes of Council Directive 91/689/EEC on hazardous waste³⁷. Reasoning along similar lines, the Court held in ARCO that an intention on the part of the holder to discard a substance can be inferred from the fact that special precautions, owing to the environmentally hazardous nature of its composition, must be taken when that substance is used³⁸. Furthermore, the court held in Palin Granit Oy that, since the fore-

seeable use of the leftover stone in its existing state represented a threat to the environment, these remnants had to be regarded as residues which its holder "intends or is required to discard"³⁹.

Finally, the fact that the handling of a production residue involves more risks than the handling of the product itself reinforces the presumption that its production was unintentional. For example, it is more dangerous for workers to transport and handle glass fragments and shards than glass bottles. On the other hand, as is noted below (section III.3.c), the fact that a treatment is not polluting does not in itself mean that any substances thereby produced do not constitute waste.

Inclusion of the Annex I object or substance in the European Waste Catalogue

The 1991 Community definition broke new ground in providing that only those substances and objects that fell into one of the categories listed in Annex I of the Directive would be classed as waste. It is possible to divide these categories into, on the one hand, those covering substances constituting industrial production residues (Q1 & Q8-11)⁴⁰ and, on the other hand, substances unfit for consumption either on account of contamination during use, consumption or simply by chance (Q4-7, Q12 & Q15), or alternatively because they no longer fulfil particular requirements (Q2, Q3 & Q13). It should also be noted that these categories have been identified not according to the specific dangers represented by the substances covered by them, but rather in line either with the risk taken or that created in disposing of the materials (disuse, illegal use, product expiry or accidental impairment...). In other words this list highlights the implicit importance of the term "discard". Even though this issue has not yet been broached by the ECJ, it would appear to be an excellent indicator⁴¹. Indeed, the objects listed in Annex I include substances and objects which are generally regarded as constituting waste.

The listing of sixteen categories of waste in Annex I is not therefore completely devoid of significance, as the Commission's waste list has been set up specifically through the application of Article 1(2). Indeed, the "European Waste Catalogue (EWC)" rightly draws on the Annex I classification⁴². Since the principal purpose of this Catalogue is to establish a "reference nomenclature providing a common terminology throughout the Community", the list of wastes contained within it

35 Palin Granit Oy, *supra* note 11, para. 44.

36 ARCO Chemie, *supra* note 7, para. 86.

37 Case C-318/98 – Fornasar [2000] ECR I-4785.

38 ARCO Chemie, *supra* note 7, para. 87. It seems that this criterion would not apply in the case of petroleum products clearly used as fuel for the energy requirements of an oil refinery (Saetti Order, *supra* note 21, para. 46).

39 Palin Granit Oy, *supra* note 11, para. 38.

40 This led the ECJ to find that waste treatment operations conducted on industrial sites are equally covered by the Framework Directive (Case C-129/96 – Inter-Environnement Wallonie ASBL & Région wallonne [1997] ECR I-7411).

41 Van de Walle, *supra* note 10, para. 43. See also the use of this criterion by Advocate General Kokott in the Case van de Walle, C-1/03 – Ministère public v Van de Walle, para. 29.

42 Commission decision 2000/523/EC (3 May 2000), as amended by the decision of 16 January 2001. This list has also been amended by Commission decisions 2001/118/EC and 2001/119/EC and the Council decision 2001/573/EC of 16 and 22 January and 23 July 2001, respectively (OJ L 47 p. 1 and 32, and L 203, p. 18), and entered into force on 1 January 2002.

is neither binding nor exhaustive⁴³. This means that the EWC contains only illustrative guidelines for determining the particular circumstances in which an object is no longer a product and is deemed to be waste. The fact that a material or substance is not included in the list does not mean that it cannot be classed as waste. Similarly, the inclusion of a substance in the list is only an indication that the material meets the definition of waste⁴⁴. Moreover, since as a matter of principle the decision endorsing the EWC is binding on all those to whom it is addressed, it is incumbent upon the Member States to incorporate the EC catalogue into a binding national regulation⁴⁵.

The social element

Even where the company holding a particular substance has accepted that it is waste, the social element, i.e. the general public's perception of the substance, can also have a bearing on its classification⁴⁶. On the other hand, the fact that a company itself may deem particular materials or substances not to constitute products or by-products is irrelevant for the purposes of classification. Indeed, the question as to whether a substance constitutes waste or not is determined independently of any declarations by the producer regarding its intention to discard it⁴⁷.

The impossibility of using the substance in its current state in another production process or for other commercial ends

In section III.3, on the concepts of products and by-products, it will be argued that this criterion is nowadays seen by the ECJ as decisive in distinguishing waste from by-products.

c. Circumstances irrelevant for the purposes of classification

Article 1(a) of the Directive defines the concept of waste in relation to the act of discarding, or the intention or obligation of the holder of the object or substance to discard it. A number of factors or circumstances are therefore of no relevance to the classification of an object or substance as waste.

The fact that a substance or object is not treated according to an Annex II method.

Does the fact that a substance is treated using a method not included in the Annexes (see below,

Table 1, page 472) mean that it does not count as waste? It is important to note here that the Annexes simply provide non-exhaustive lists of examples of those recovery and disposal techniques that are actually used in practice. This means that any methods that are analogous to the recovery and disposal operations expressly included in these two Annexes must be considered as on an equal footing for the purposes of waste classification⁴⁸.

The treatment of the substance in an industrial process

In *Environnement Wallonie* the ECJ held that the simple fact of integrating a substance, whether directly or indirectly, into an industrial production process did not in itself prevent it from being considered as waste⁴⁹.

Several arguments lay behind this reasoning. First, both the Annex I list of waste categories and the Annex II recovery and disposal operations show that the concept of waste does not in principle exclude any type of residue, industrial by-product or other substance resulting from production

43 The list's introductory note specified that even though it is a harmonised list subject to periodic review, "the inclusion of a material in the list does not mean that the material is waste material in all circumstances. Materials are considered to be waste only where the definition of waste in Article 1(a) of Directive 75/442/EEC is met."

44 Advocate General Kokott's Opinion in C-1/03, *Ministère public v Van de Walle* 29, para. 29.

45 The ECJ thus found against Luxembourg which had, on the one hand, incorporated the EWC by means of a ministerial circular which was binding on the administration, but not on third parties, whilst on the other hand introducing alongside the EWC a purely national nomenclature differing from the EWC and having the effect of excluding the use of the EWC for a large number of operations in which the classification of waste is taken into account (C-196/01 – *Commission v Luxembourg* [2002] ECR I-569). Notwithstanding the fact that a national approach could entail greater administrative difficulties for traders, a national classification system differing from that of the Community list of dangerous wastes may nonetheless be acceptable (C-194/01 – *Commission v Austria*, 29 April 2004).

46 *ARCO Chemie*, supra note 7, para. 73. Considered in isolation, this criterion is not relevant (*Saetti Order*, supra note 21, para. 46).

47 Opinion of Advocate General Alber in *ARCO Chemie*, supra note 7, para. 59.

48 Niselli, supra note 33, para. 40. For an application of the ARCO ruling in English law, see the Court of Appeal's ruling in *Attorney General's Reference No. 5 2000* [2001] CMLR 1025. In this case the national regulation on waste was upheld even though the recovery operation, consisting of the spreading of a re-treated residue as fertiliser over agricultural land, took place outside a waste recovery installation. The important point, for the Court of Appeal, was the holder's awareness that the residue was being discarded.

49 *Inter-Environnement Wallonie*, supra note 7.

processes (see below, Table 1, page 472). This means that many of the items listed in Annex II B could also be taken to cover the recovery of residues from industrial processes⁵⁰. This view is confirmed in the ECW which includes a significant number of industrially treated wastes⁵¹. Moreover, "Directive 75/442, as amended, applies ... not only to the disposal and recovery of waste by specialist undertakings, but also to the disposal and recovery of waste by the undertaking which produced them, at the place of production." Finally, the fact that industrial installations may be able to dispose of waste without causing harm to the environment does not prevent the materials involved from being classed as waste⁵².

The market value of a substance or object

One might wonder whether the act of "discarding" an object is synonymous with that of "abandonment" as traditionally understood in civil law. Following the Vessoso and Zanetti judgments the ECJ has been clear on this point holding that the concept of waste does not exclude objects and substances which can be commercially re-used⁵³, "even if the materials in question may be the subject of a transaction or quoted on public or private commercial lists"⁵⁴. Indeed, whatever the future might have in store for an object has no bearing on its present classification as waste. This means that national regulations must not restrict the scope of the concept of waste by excluding from it any objects and

substances that can be commercially re-used⁵⁵. This is not however to say that national enforcement and inspection regimes may not be managed along different lines on the basis of the destination of the waste for either recovery or disposal.

Any intention of the holder to find a commercial opening for its substances is not therefore relevant, because the determination as to whether a substance or object constitutes a threat either to human health or to the environment is made on objective rather than subjective grounds. In the words of Advocate General Jacobs, classification as waste "has nothing to do with the intention of the person disposing of the substance. Nor is the possibility of such a threat affected by whether or not the product can be recycled or reused"⁵⁶.

This reasoning can be illustrated by using the example of the jeweller who in preparing jewels necessarily ends up with gold or silver residues which must, due to their value, be retained and melted down. The goldsmith would not, in an ideal world, be producing such residues. Their production is by no stretch of the imagination deliberate. However, despite the presence of these precious metals, such production residues must be classed as waste, as the holder discards them during the production process⁵⁷. For this reason, both OECD and Community rules include precious metals in their lists setting out different types of waste.

Therefore, a residue cannot cease to be classified as such for the simple reason of its inclusion in a commercial list. Similarly, the existence of a market does not create a presumption that the residue constitutes a product.

The Court's reasoning must be endorsed. The exclusion of commercially reusable waste would have the effect of rendering virtually impossible any control procedures, as holders could escape liability for waste treatment and/or handling obligations simply by pointing to a potential commercial re-use. The consolidation of environmental protection, a fundamental objective of Directive 75/442/EEC, inescapably leads to a broad interpretation of the concept of waste.

Ecologically responsible treatment

The fact that a substance may have been recovered in an ecologically responsible manner has no impact on its classification⁵⁸. Considering the exclusion of industrial establishments from the applicable waste management regime on the grounds

50 Opinion of Advocate General Jacobs in *Tombesi*, supra note 24, para. 53.

51 *Inter-Environnement Wallonie*, supra note 7, para. 27.

52 *Ibid.*, paras. 29 and 30.

53 Joined Cases C-206/88 and C-207/88 – *Vessoso & Zanetti* [1990] ECR 1461, para. 9; C-422/95 – *Commission v Germany* [1995] ECR I-1097; *ARCO Chemie*, supra note 7, para. 5; C-318/98 – *Fornasar*, [2000] ECR I-4785.

54 *Tombesi*, supra note 24, para. 54.

55 C-359/88 – *Zanetti* [1990] ECR 1509.

56 Opinion of Advocate General Jacobs in Joined Cases C-206/88, C-207/88 and C-359/88 – *Vessoso & Zanetti* [1990] ECR 1470, para. 22.

57 On this issue, the Paris Court of Administrative Appeal has held that obsolete raw materials containing precious metals are nonetheless waste (CAA Paris, 23 September 1999, *Sté Actimétal*, req. No. PA01156).

58 *Inter-Environnement Wallonie*, supra note 40, para. 30; *ARCO Chemie*, supra note 7, para. 65; Opinion of Advocate General Jacobs in *Palin Granit Oy*, supra note 11, para. 49. In *ARCO Chemie*, supra note 7, the Court did not adopt the position of Advocate General Alber, who proposed excluding from the concept of waste any substances which did not "pose a danger typical of waste" (para. 109).

that they constituted less of a nuisance than waste treatment plants, the ECJ held that "there is nothing in that directive to indicate that it does not apply to disposal or recovery operations forming part of an industrial process where they do not appear to constitute a danger to human health or the environment"⁵⁹. By the same token, the fact that the waste is used in the remediation of land which has suffered under the impact of mining activities does not mean that they cease to be classified as such⁶⁰. Therefore, the concept of waste is not to be understood as excluding substances and objects which are capable of being recovered as fuel in an "environmentally responsible" manner and without substantial treatment⁶¹.

This jurisprudence must be followed because the exclusion of materials subject to ecologically responsible treatment is in fact a non-exclusion, as the ratio legis of the Directive in any case requires that waste be treated using methods that do not harm either human health or the environment. The fact that residues may have been rendered harmless thanks to ecologically suitable methods tends, by contrast, to facilitate respect for Article 4 which imposes on the holder the obligation to take care not to cause any damage to the environment⁶². In fact it is always possible, and even desirable, to dispose of or recover waste in an ecologically responsible manner⁶³. Moreover, the recovery of waste reduces the risk of it being abandoned by the holder.

Finally, the exclusion of material which does not constitute a danger to the environment would not even be justified on technical grounds. Therefore "an ordinary fuel may be burnt without regard to environmental standards and without thereby becoming waste"⁶⁴. Although such illegal combustion might well constitute an infringement of the rules applicable to the listed installations and the fight against atmospheric pollution, it would not however fall under waste regulations. Conversely, wood chippings can be burned as fuel and thus take the place of other fuels without any negative environmental repercussions. Such respectful treatment of the environment does not however deprive the waste of its initial classification.

The physico-chemical composition of the substance

The Article 1 definition of waste covers "any substance or object in the categories set out in Annex I", which in turn includes the catch-all category of "any materials, substances or products". The physico-

co-chemical properties of waste therefore have no bearing on the classification of a substance as waste. The fact that the mineral residue has the same composition as that of the basic rock does not bring it outside the definition of waste⁶⁵. In the same way, the fact that a product is "natural" (as opposed to "artificial") does not prevent it from becoming waste. The ECJ has in particular found that marble debris⁶⁶, wood chippings⁶⁷ and mineral residues⁶⁸ turned into waste as soon as the holder discarded them. Moreover, a number of natural products figure in the European Waste Catalogue (for example item 02 00 00).

Conversely, a product does not become waste simply on the basis of its toxicity. This reasoning appears to be logical because various natural products, such as asbestos, are carcinogenic.

III. Secondary materials and by-products

1. Guiding Principle: the control of waste is required right up until disposal or recovery

The usefulness of a relatively strict regime of waste management regulation is often questioned in the light of the ultimate under-regulation of numerous dangerous substances. In the same vein, the question arises as to why we should bother overseeing the disposal of organic agricultural wastes when a large number of pesticides on the market represent a much more significant danger.

These wholly legitimate questions can be addressed by stressing the nature of the risks

59 Inter-Environnement Wallonie, *supra* note 7, para. 30.

60 AvestaPolarit Chrome Oy, *supra* note 1, para. 42.

61 ARCO Chemie, *supra* note 7, para. 65.

62 Opinion of Advocate General Jacobs in *Palin Granit Oy*, *supra* note 11, para. 51.

63 Opinion of Advocate General Alber in *ARCO Chemie*, *supra* note 7.

64 *ARCO Chemie*, *supra* note 7, para. 66; *Niselli*, *supra* note 33, para. 37.

65 Opinion of Advocate General Jacobs in *Palin Granit Oy*, *supra* note 11, paras. 44-45.

66 *Tombesi*, *supra* note 24, para. 25.

67 *ARCO Chemie*, *supra* note 7, para. 96.

68 *Palin Granit Oy*, *supra* note 11, and *AvestaPolarit Chrome Oy*, *supra* note 1.

caused by waste. These risks do not stem solely from the waste's physical or chemical properties, but also from the fact that the holders do not get rid of it in conformity with the administrative rules in force. No longer serving in its original role, the waste thus represents a particular risk on account of its location (for example, close to a residential area), accumulation and length of storage. The following examples illustrate this point more clearly. Although garden rubbish does not represent any danger for aquifers, its abandonment on listed chalk grassland in a nature sanctuary constitutes a threat to wild flora that requires barren soil for nutrition. Similarly, even where there is no risk of pollution, "the deposit and stocking of substantial quantities of leftover stone manifestly involves the risk...[of] the creation of a rural eyesore"⁶⁹.

Therefore, waste law endeavours both to prevent pollution and the risks that waste represents on account of its physico-chemical composition (for example, PCBs and PCTs are intrinsically dangerous wastes) as well as ensuring that all materials no longer of any use to the holders, whether dangerous or not, are treated in accordance with rules of administrative law.

This means that the degree of administrative control, required as soon as the substance stops being used in accordance with its normal use, must be maintained until the waste is definitively disposed of or recovered⁷⁰. Waste can be eliminated through an Annex II A disposal operation (see below, Table 1, page 472). Alternatively a recovery operation under Annex II B entails the transformation of the waste into a secondary raw material, a concept that requires some additional clarification.

2. Secondary raw materials

Although Article 3(1)(b)(i) favours actions designed to obtain such materials, Directive 75/442 does not define secondary raw materials. In an answer to a parliamentary question, the Commission stated that such materials were those "derived from recycling, re-use, reclamation or other recovery processes"⁷¹. In the *Tombesi* case, Advocate General Jacobs stressed the role of recovery operations as an essential criterion for distinguishing secondary materials from waste products. In his opinion, recovery can be conceived as "a process by which goods are restored to their previous state or transformed into a usable state or by which certain usable components are extracted or produced"⁷².

The transformation of wastes, residues or any of their constituent elements with a view to producing usable raw materials constitutes a recovery operation for the purposes of Annex II B. Such transformation need not necessarily take the form of pre-processing, in other words, the recovery of a residue may be direct. Unless and until the residue has been entirely transformed into a secondary raw material through recovery, it must be considered as waste. This position also satisfies one of the objectives of the Directive set out in Article 3(1)(b)(i), requiring Member States to take appropriate measures "to encourage...the recovery of waste by means of recycling, re-use or reclamation or any other process with a view to extracting secondary raw materials".

Prior to recycling or reclamation, most materials must first be collected, stocked, sorted, washed and purified. Recovery operations may therefore entail several stages⁷³. It is therefore essential to know when and how a waste material becomes a secondary raw material and, by extension, is no longer subject to waste regulations.

The particular pre-processing (including sorting, washing, preliminary elimination of toxic substances) that is necessary for the recovery of a substance (e.g. fuel to be used for the production of energy) cannot, according to ECJ, be equated with an operation depriving the same substance of its status as waste. Waste therefore cannot be placed beyond the reach of Community and national law alike on the sole grounds that it has been treated, without its features having been in any way modified⁷⁴. The grinding into powder of wood impregnated with toxic substances is not an operation of such a nature as to "have the effect of transforming those objects

⁶⁹ Opinion of Advocate General Jacobs in *Palin Granit Oy*, supra note 11, para. 33.

⁷⁰ Niselli, supra note 33, para. 52.

⁷¹ Commission reply of 21 January 1997 to the parliamentary question E-3256/96 (OJ 1997 C 138/44).

⁷² Opinion of Advocate General Jacobs in *Tombesi*, supra note, para. 52. Applied to the particular case of residues or by-products of a production process, this definition allows for the elaboration of a range of criteria for differentiation, even if the Advocate General recognised that a potentially large number of marginal cases could in practice arise.

⁷³ Directive 75/442 moreover provides that residue wastes may subsist even after recovery operations under categories R1-R10. Accordingly, categories R11-R13 of Annex II B apply to operations falling under categories R1-R10 and the waste derived from such procedures.

⁷⁴ *Tombesi*, supra note 24, paras. 53 and 54.

into a product analogous to a raw material, with the same characteristics as that raw material and capable of being used in the same conditions of environmental protection", because it does not eliminate the toxicity⁷⁵. Applying the same reasoning, the English High Court found that the mere mixing of different wastes in order to produce fuel did not amount to a recovery operation. The mixed residues remained subject to the waste regulations up until the incineration intended to produce the energy⁷⁶.

Were this view not espoused, then it would be possible for waste to lose its classification for the simple reason that it had undergone a particular transformation designed as part of its recovery as a substance.

Recovery is therefore deemed to have been completed and, by extension, waste to have become a secondary raw material when the substance can be used as a raw material without the need for any supplementary treatment. This principle emerged from the *Mayer Parry* case where the Court held that the term "recycling" for the purposes of Directive 94/62/EC on Packaging and Packaging Waste had to be understood as the act of returning that material to its original state, and of re-using it in accordance with its original purpose⁷⁷.

The ECJ has however exercised extreme caution in this area. According to its jurisprudence, even when waste has been subject to a complete recovery operation under which the substance acquires the same properties and characteristics as a raw material, it can still be considered as waste if, according to the Article 1(a) definition, the holder has either discarded it or has the intention or obligation to do so⁷⁸. Such an eventuality would appear to be extremely unlikely, because the complete recovery operation would be undertaken with the precise intention of extracting secondary raw materials from the waste, the value of which was greater than the recovery costs. The only conceivable situation in which the holder would be likely to get rid of the secondary raw materials either by disposing of them or performing another recovery operation on them would be one in which it was impossible to sell the materials (for example due to a collapse of the market for them).

3. By-products

In a previous article, we undertook an in-depth analysis as to how the ECJ introduced a distinction

between by-products which undertakings do not wish to discard within the meaning of Article 1(a)(i) of the Framework Directive and residues covered by the provisions of the Directive⁷⁹. To sum up, by-products were deemed to be "goods, materials or raw materials which have an economic value as products regardless of any form of processing and which, as such, are subject to the legislation applicable to those products"⁸⁰. In order to fall outside the definition of waste several conditions must be satisfied, namely, the holder of the substance has to prove a direct⁸¹, continuous (in other words not to be preceded by any prior transformation)⁸², admissible⁸³, and certain⁸⁴ use of the substance as "an integral part of the production process"⁸⁵. The simple fact of re-use in line with the above conditions transforms the substance into a by-product which is no longer subject to the provisions regulating recovery and disposal. The final re-use of a substance discarded by its producer thus has the effect of turning it *ab initio* into a by-product, even if its holder no longer has any interest in it (subjective view; see above, section II.2.b). Be that as it may however, the requirement to give a broad understanding to the concept of waste means that the conditions laid down by the ECJ must be interpreted strictly⁸⁶.

IV. Disposal and recovery operations

As hinted as above, several factors have to be taken into consideration when assessing whether a substance or an object falls under the definition of waste, including the question as to whether the object or substance being discarded becomes sub-

75 ARCO Chemie, *supra* note 7, para. 96.

76 *Castle Cement v The Environment Agency*, *supra* note 8.

77 Case C-114/01 – *Mayer Parry*, para. 83.

78 ARCO Chemie, *supra* note 7, paras. 94 and 96; *Palin Granit Oy*, *supra* note 11, para. 46.

79 De Sadeleer, "Waste, Products and By-products", JEEPL 2005, pp. 46-58.

80 *Palin Granit Oy*, *supra* note 11, para. 35; *AvestaPolarit Chrome Oy*, *supra* note 1, para. 35; Case C-121/03 – *Commission v Spain*, para. 58; Case C-416/02 – *Commission v Spain*, para. 87.

81 *AvestaPolarit Chrome Oy*, *supra* note 1, paras. 36-42.

82 *Ibid.*, paras. 34-37.

83 *Ibid.*, para. 43.

84 *Ibid.*, paras. 34-37.

85 *Palin Granit Oy*, *supra* note 11, paras. 34 and 36; *AvestaPolarit Chrome Oy*, *supra* note 1, paras. 34-37.

86 *Palin Granit Oy*, *supra* note 11, para. 36.

ject to a disposal or recovery operation under Annex II of the Directive, or an analogous operation, even where it is destined for re-use⁸⁷. It is therefore important to consider the various operations that are likely to occur when the objects or substances are processed. For these different reasons this last section will first discuss the origin of these concepts (IV.1), before going on to identify particular difficulties related to the way in which they are framed (IV.2).

1. Origin and scope of the concepts of recovery and disposal

a. Origin of the concepts

Following the modifications introduced by Directive 91/156/EEC, the concepts of "recovery" and "disposal" both depend upon a generic concept – that of waste "management". This new concept embraces "collection, transport, recovery and disposal of waste, including the supervision of such operations and the after-care of disposal sites" (Article 1(d)). Whilst the concept of collection has been defined as including "the gathering, sorting and/or mixing of waste for the purpose of transport", the concepts of "transport", "recovery" and "disposal" have not been defined in their own right.

Article 1 of Directive 75/442 defines these operations by reference to operations covered by Annex II A as far as "disposal" operations are concerned, and to operations listed in Annex II B for "recovery" operations. Thus the concepts of recovery and disposal are dependent on the contents of Annexes II A and II B⁸⁸ (see on page 472).

b. Illustrative nature of the operations listed in the annexes

Each of the two lists is preceded by a note stating that the annex "is intended to list disposal operations as they occur in practice" and that in accor-

dance with Article 4 of the Directive "waste must be disposed of without endangering human health and without the use of processes or methods likely to harm the environment".

The two annexes thus are non-exhaustive lists of methods of waste treatment as they are carried out in practice. The fact that the annexes are not exhaustive does not allow us to infer that any material treated within the framework of one of the operations covered necessarily constitutes waste (see above, section II.3.b). Conversely, due to the illustrative nature of the annexes, operations analogous to those of recovery and disposal expressly covered by the two annexes must also be taken into consideration in the process of classifying the concept of waste⁸⁹.

c. The equivocal nature of disposal operations

It should be noted from the outset that the various disposal operations include a certain number of waste treatment methods that can be criticised from the viewpoint of environmental protection. These include, in particular, the deep injection of wastes (D3) which are capable of contaminating aquifers, releases into water bodies or the sea (D6 and D7) which in any case cause modifications to aquatic ecosystems, and incineration at sea (D11). Having said this, the mere fact of the inclusion of an operation in Annex II A does not mean that the Member State is bound to issue an authorisation.

Be that as it may, the very notion of "disposal" is equivocal in nature. The concept of waste is closely linked to that of discarding which is taken to mean "to get rid of". However, the disposal operations listed in Annex II A do not all have the objective of getting rid of the waste. In the event of landfill deposit, deep injection, sub-soil burial/disposal and storage, the waste is not disposed of as such. This means that the waste that has supposedly been eliminated is in fact still a waste to be disposed of. There is thus a fundamental tension within this concept of disposal which reflects a specific aspect of the problem of waste management and stems from the fact that it is practically impossible to dispose of waste completely.

d. The concept of recovery

The concept of recovery is another core concept in waste law. It covers processes through which sub-

⁸⁷ Joined Cases C-304/94, C-330/94, C-342/94 and C-224/95 – *Tombesi* [1997] ECR I-3561; *Inter-Environnement Wallonie*, *supra* note 7, paras. 25 and 26.

⁸⁸ Annexes II A and II B of Directive 75/442/EEC have been adapted to technical progress by Commission Decision 96/350/EC of 24 May 1996 (OJ 1996 L 135/32).

⁸⁹ Paragraph 50 of Advocate General Jacobs' Opinion in C-304/94, C-330/94, C-342/94 et C-224/95 – *Tombesi*.

Table 1

ANNEX IIA – Recovery Operations	
D 1	Deposit into or onto land (e.g. landfill, etc.)
D 2	Land treatment (e.g. biodegradation of liquid or sludgy discards in soils, etc.)
D 3	Deep injection (e.g. injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.)
D 4	Surface impoundment (e.g. placement of liquid or sludgy discards into pits, ponds or lagoons, etc.)
D 5	Specially engineered landfill (e.g. placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)
D 6	Release into a water body except seas/oceans
D 7	Release into seas/oceans including sea-bed insertion
D 8	Biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12
D 9	Physico-chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations numbered D 1 to D 12 (e.g. evaporation, drying, calcination, etc.)
D 10	Incineration on land
D 11	Incineration at sea
D 12	Permanent storage (e.g. emplacement of containers in a mine, etc.)
D 13	Blending or mixing prior to submission to any of the operations numbered D 1 to D 12
D 14	Repackaging prior to submission to any of the operations numbered D 1 to D 13
D 15	Storage of wastes pending any of the operations numbered R 1 to R 12 (excluding temporary storage, pending collection, on the site where it is produced)

ANNEX IIA – Disposal Operations	
R 1	Use principally as a fuel or other means to generate energy
R 2	Solvent reclamation/regeneration
R 3	Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes)
R 4	Recycling/reclamation of metals and metal compounds
R 5	Recycling/reclamation of other inorganic materials
R 6	Regeneration of acids or bases
R 7	Recovery of components used for pollution abatement
R 8	Recovery of components from catalysts
R 9	Oil re-refining or other reuses of oil
R 10	Land treatment resulting in benefit to agriculture or ecological improvement
R 11	Use of wastes obtained from any of the operations numbered R 1 to R 10
R 12	Exchange of wastes for submission to any of the operations numbered R 1 to R 11
R 13	Storage of wastes pending any of the operations numbered R 1 to R 12 (excluding temporary storage, pending collection, on the site where it is produced)

stances are rendered back into their original state or transformed into a usable state and also those through which particular usable elements are extracted or produced from these substances (see

above, section III.2). Just as for the concept of disposal, recovery is capable of embracing an extremely broad range of operations from recycling to the recovery of different materials, with An-

nex II B restricting itself to the listing of some types of operation. Having said this, the concept of recovery is not necessarily synonymous with activities which do not pose any threat to environmental protection. Accordingly, activities involving the spreading of sewage containing heavy metals on agricultural land or the burning of chemical waste in incinerators with a view to producing energy must be considered as forms of recovery, even though this is often far from ideal.

It is accepted that in certain circumstances the use of waste in an unmodified form may be classified as a recovery operation. For example, "land treatment resulting in benefit to agriculture or ecological improvement", an operation falling under point R10 of Annex II B of Directive 75/442/EEC, does not necessarily require a modification of the organic waste⁹⁰. Moreover, the Court accepted in the ASA case that waste which is not transformed but used to produce secondary raw materials may also be considered to have been subject to a recovery operation. The Court went on to find that "the essential characteristic of a waste recovery operation is that its principal objective is that the waste serve a useful purpose in replacing other materials which would have had to be used for that purpose, thereby conserving natural resources"⁹¹. The decisive issue is thus whether the waste destined for recovery is capable of satisfying this "useful purpose" by acting as a replacement for other materials which would otherwise have had to be used to carry out the same function.

e. Recycling

Recycling is a recovery method par excellence since it allows for the extraction of secondary raw materials from production residues (points R3-R5 of

Annex II B) (see above, section III.2). However, since the concept of recycling is no more closely defined than the concept of recovery, the authorities are confronted with the difficulty of distinguishing the latter from recycling operations.

To date only two sectoral directives have yet defined how the term recycling is to be understood. Directive 2002/96/EC on waste electrical and electronic equipment defines this term as "the reprocessing in a production process of the waste materials for the original purpose or for other purposes" (Article 3(e)), whilst Directive 94/62/EC on packaging and packaging waste defines the term in the following manner: "the reprocessing in a production process of the waste materials for the original purpose or for other purposes including organic recycling but excluding energy recovery" (Articles 3 and 7). The definition of recycling set out in Directive 94/62 on packaging and packaging waste was clarified by the Court of Justice in the Mayer Parry case. The Court interpreted this definition as meaning that "the packaging waste [must] be worked in order to produce new material or to make a new product...possessing characteristics comparable to those of the material of which the waste was composed in order to be able to be used again for the production of...packaging... or for other purposes". This means that "an operation of energy recovery or a disposal operation cannot in any case be regarded as a recycling operation"⁹². The Court found that its interpretation would not be different even if one took into account the concepts of "recycling" and "waste" referred to in the Framework Directive on waste, since the Framework Directive did not provide a definition of the concept of recycling.

2. Criteria for distinguishing recovery and disposal operations

a. Core issues

Under the terms of Regulation 259/93/EEC on the transfrontier movement of waste, transfers of waste destined for recovery are subject to less stringent procedures than those that apply to waste which is to be disposed of⁹³. In order to determine the procedure applicable to the transfrontier movement of waste, it is thus essential to be able to distinguish

⁹⁰ On this, see the Opinion of Advocate General Jacobs in Case C-116/01 SITA – EcoService Nederland, para. 82.

⁹¹ Case C-6/00 – ASA, para. 69; C-228/00 – Commission v Germany, para. 46; and C-458/00 – Commission v Luxembourg, para. 36.

⁹² Mayer Parry, *supra* note 77, paras. 66-69.

⁹³ The Court of Justice has emphasised that the Community legislator envisaged wastes destined for recovery being able to circulate freely between the States in order to be treated (C-203/96 – Dusseldorp [1998] ECR I-4075, para. 33). This freedom of circulation is not absolute since the authority of dispatch could oppose the exportation on the basis of its own environmental legislation on the grounds that the environment of the importing State could be modified (C-277/02 – EU-Wood-Trading).

recovery from disposal operations⁹⁴. If the relevant operation is classified as a disposal operation the authorities of the Member State of destination and the Member State of dispatch may oppose it with reference to the principles of proximity and self-sufficiency (Article 4(3)). If there is no opposition on these grounds then the reasons which can be invoked by the administration are more limited (Article 7(4)(a)).

b. Obligation for treatment operations to involve either recovery or disposal

For the purposes of the application of the Framework Directive and of Regulation 259/93, any waste treatment operation must be classified either as recovery or disposal. Since the procedural and substantive conditions that apply to these operations differ substantially, the same operation may not be simultaneously classified as both recovery and disposal⁹⁵.

c. Specific and circumstantiated examination of the treatment operation where the operation does not fall a priori under either classification

"Where, having regard solely to the wording of the operations in question, a waste treatment operation cannot be brought within one of the operations or categories of operations referred to in Annex II A or II B to the Directive, it must be classified on a case-by-case basis in the light of the objectives of the Directive"⁹⁶. In other words a regulation which purported in general terms unequivocally to classify as "recovery" an operation for the deposit of wastes would fail to satisfy this requirement for a specific and circumstantiated examination of the waste treatment methods. An unequivocal classification would moreover entail the risk of disposal methods being deliberately classified as recovery operations in order to avoid the more stringent regulatory regime for disposal operations⁹⁷.

d. The more stringent regime relating to disposal prevails in cases of doubt

Whilst the existence of a legal framework for the classification of every waste treatment operation as either a recovery or a disposal operation is expedient, any given operation may however display aspects indicative both of recovery and of disposal.

In such cases, the objectives of the protection of the environment and of human health pursued both in Directive 75/442/EEC and Regulation 259/93 require that the operation be classified as a disposal operation⁹⁸.

e. Classification in the light of the real purpose of the treatment operation

As has already been stressed, in relation to the classification of an operation which does not involve the modification of the composition of the waste, it is important to consider whether the waste destined for recovery is capable of fulfilling "a useful purpose" by replacing other materials which would otherwise have had to be used in order to carry out the same functions⁹⁹. Following this reasoning, the Court of Justice found that "the deposit of waste in a disused mine does not necessarily constitute a disposal operation for the purposes of D 12 of Annex II A to the Directive"¹⁰⁰. It is therefore important to bear in mind the real objective of the operation. Indeed, it may be tempting to classify storage techniques as recovery operations on the grounds that the waste fulfils "a useful purpose".

In order for an operation to be classified as recovery, it is necessary that the waste serves a purpose other than mere storage or disposal. This classification will be made where:

- the operation consisting of the recovery of the waste (for example, the filling of hollow spaces in a disused mine) is justified on technical and scientific grounds;
- the waste has a useful purpose on the basis of its properties; in other words, it must be particularly suited to the operation;

94 C-6/00 – ASA, para. 40; *Commission v Luxembourg*, para. 21. Nonetheless the authority of dispatch cannot reclassify the operation for the treatment of waste since the same transfer operation would be examined differently by the various authorities involved in the decision-making process. If the competent authority of dispatch considers that the purpose has been classified erroneously, it must base its objection on the specific grounds of this classificatory error (ASA, para. 47; C-472/02 – Siomab, para. 48).

95 C-6/00 – ASA, para. 63; *Commission v Luxembourg*, paras. 32-36; *Mayer Parry*, para. 63 and 66-69.

96 ASA, *supra* note 95, para. 64.

97 See further the Opinion of Advocate General Jacobs in *SITA EcoService Nederland*, para. 76.

98 *Ibid.*, para. 77.

99 ASA, *supra* note 95, para. 69.

100 *Ibid.*, para. 71.

- the waste that is used replaces other materials which would normally have had to be used to carry out this operation.

f. The classification of operations in respect of which payments for services are made

In order to ascertain in an objective manner whether the waste used is destined to fulfil a useful purpose, it is necessary to consider whether the holder pays the person who is supposed to carry out the recovery or whether the latter pays the holder¹⁰¹. The fact of having to pay the person in charge of the treatment operation indicates that it is more likely to be a disposal than a recovery operation.

g. Application of the criteria to the deposit of wastes in disused mines

If one considers Annexes II A and II B of Directive 75/442/EEC, depositing waste underground is capable of falling under either point D12 of Annex II A on disposal operations, namely "permanent storage (for example, the placing of containers in a mine, etc.)", or under point R5 of Annex II B, i.e. "the reclamation of other inorganic materials". The choice of one or the other of these variants will have considerable ramifications for the transfrontier movement of waste destined to be deposited in disused mines.

In the ASA case it was held that the deposit in a disused salt mine of mineral residues may constitute a recovery operation. This means that such operations may benefit from more flexible procedural conditions than the conditions applicable to the same type of wastes which are destined to be disposed of by combustion (see above, section IV.2.a). The assessment of the "useful purpose" of these residues naturally entails that the administrative authorities establish whether such an operation would have been possible by using materials other than the waste in question¹⁰². A range of factors may influence the classification which is to be

given to the method of underground storage. Where the hollow spaces of a disused mine could be filled with other materials which would be less polluting, or more suitable for that purpose, there is no justification for the use of more polluting or less suitable materials which come from abroad. Similarly, where mines have at their disposal on the pithead or within the perimeter mineral exploitation residues which could be used more cheaply for the purposes of shoring up the mine, it will not be necessary to fill the hollow spaces with waste from abroad. In such cases, the underground storage of foreign waste would have to be considered as a disposal and not a recovery operation.

Finally, where the producer of waste pays the operator of the disused mine to discard his waste, this is understood as an attempt to dispose of the waste. This is especially the case where the operation of filling the mines would not have been carried out by the operator or by public authorities in the light of its prohibitive costs. In other words, the operator or public authority does not pay for the so-called filling operation, but rather the holder of the wastes himself pays the person responsible for the underground storage operation.

h. Application of the criteria to incineration operations

The issue of an operation's purpose is thrown into sharper relief in cases involving the incineration of waste where the incinerators in question have the ancillary function of enabling the recovery of energy. Such methods may fall under two different regimes: on the one hand, Annex II A includes under disposal operations the "incineration on land" (D10) whilst on the other hand Annex II B lists amongst recovery operations the "use principally as a fuel or other means to generate energy" (R1). Accordingly, the possibility of classifying any type of incineration as a recovery operation on the grounds that energy is produced, even in very small quantities, could have unacceptable consequences from the viewpoint of environmental protection, since the wastes thereby recovered are generally burned under less stringent conditions than those applicable to incinerators used for waste destined for disposal¹⁰³. In the absence of more specific criteria, there is a danger of the waste being recovered subject to less stringent operating conditions than those in force in the Member State of origin, which

¹⁰¹ Opinion of Advocate General Jacobs in SITA EcoService Nederland, paras. 76 and 88.

¹⁰² Opinion of Advocate General Jacobs in ASA, *supra* note 95, para. 86.

¹⁰³ Opinion of Advocate General Jacobs in Commission v Luxembourg, para. 44. See also the operational conditions applicable to incinerators provided for in the Parliament and Council Directive 2000/76/EC on the incineration of waste.

could have the effect of increasing the risk of atmospheric pollution and in particular the release of dioxins.

Since Community law does not stipulate a minimum quantity of energy which must be recovered from the incineration process, it is difficult to distinguish between the scope of points R10 (incineration on land) and R1 (incineration with energy recovery). This lack of precision is not conducive to legal certainty¹⁰⁴. Making the most of the uncertainty in Community legislation and their own concern to restrict the movement of waste in order to protect their national incineration capacity (application of the principles of proximity and self-sufficiency), several Member States (such as the Netherlands and Germany) have interpreted the scope of the adjective "principal" with reference to technical criteria (for example, the degree of combustibility in the case of energy recovery). The application of these criteria to operations located outwith Germany and the Netherlands (in particular their application to cement works in Belgium) has allowed the authorities of these two countries to prohibit the export by their manufacturers of chemical wastes on the grounds that these substances could only be disposed of abroad.

It is certain that the "principal use" of a waste as fuel constitutes the criterion for distinguishing between the two types of operation¹⁰⁵. Accordingly, it is not necessary that the waste is entirely recovered in order to benefit from this classification; by contrast however, waste treatment operations which only involve recovery at an ancillary level cannot be associated with the term recovery. In the absence of more specific criteria, it is of vital importance to consider the meaning of the concepts of principal and ancillary operations. The Court of Justice has nonetheless provided some clarification regarding the distinction between these two points in two judgments handed down on 13 February 2003, ruling on disputes between the Commission and Germany and Luxembourg, respectively¹⁰⁶. These two rulings were confirmed on 3 April 2003 in the Court's judgment in *Sita Eco Service Nederland*¹⁰⁷.

In the first two cases, the national authorities opposed the transfer of waste which the "notifiers" claimed to be destined for recovery in incinerators located abroad. The German and Luxembourg authorities, in contrast, considered that the waste involved was destined for disposal since the ener-

gy recovery was only accessory to the principal operation consisting of discarding the wastes. The European Commission for its part argued that in failing to apply the provisions of Regulation 259/93/EC and of the Framework Directive correctly, Germany and Luxembourg had breached the principle of the free circulation of wastes destined for recovery¹⁰⁸.

Even though it arrived at different conclusions in these two cases, the Court followed identical reasoning. In order for an incineration operation, in which the waste is used as fuel, or as any other means for the production of energy, to fall under point R1 of Annex II B of the Framework Directive, the following conditions must be satisfied:

- "the main purpose of the operation concerned [must be] to enable the waste to be used as a means of generating energy. The term 'use' in point R1 of Annex II B to the Directive implies that the essential purpose of the operation referred to in that provision is to enable waste to fulfil a useful function, namely the generation of energy"¹⁰⁹.
- the operation must be effectively intended for the production of energy. "This assumes both that the energy generated by, and recovered from, combustion of the waste is greater than the amount of energy consumed during the combustion process and that part of the surplus energy generated during combustion should effectively be used", in the form of heat or electricity¹¹⁰.
- in conformity with the term "principal" used in point R1 of Annex II B, "the greater part of the waste must be consumed during the operation and the greater part of the energy generated

¹⁰⁴ The Belgian Council of State has for example held that mere incineration without energy recovery must be considered to be a form of disposal (C.E., Sprl Montulet, No. 64578 of 18 February 1997, T.M.R., 1997, reported by Lavrysen, p. 380).

¹⁰⁵ Gros/Marsal, "La notion de valorisation des déchets", *Revue du marché unique européen* 1997, p. 109.

¹⁰⁶ Case C-228/00 – Commission v Germany; C-458/00 – Commission v Luxembourg.

¹⁰⁷ *Sita Eco Service Nederland*, supra note 90.

¹⁰⁸ Case C-203/96 – Dusseldorp, para. 33.

¹⁰⁹ *Sita EcoService Nederland*, supra note 90, para. 41; C-228/00 – Commission v Germany, para. 41; C-458/00 – Commission v Luxembourg, para. 32.

¹¹⁰ *Sita EcoService Nederland*, supra note 90, para. 41; C-228/00 – Commission v Germany, para. 42; C-458/00 – Commission v Luxembourg, para. 33.

must be recovered and used"¹¹¹. In other words "The combustion of waste therefore constitutes a recovery operation where its principal objective is that the waste can fulfil a useful function as a means of generating energy, replacing the use of a source of primary energy which would have had to have been used to fulfil that function"¹¹².

Where the projected use of the waste abroad satisfies the criteria cited above, the administrative authorities must regard it as a waste recovery operation in conformity with point R1 of Annex II B. They may not take into consideration any other criteria such as the calorific value of the waste, the amount of harmful substances contained in the incinerated waste or the fact that the waste has been mixed¹¹³.

On the basis of this reasoning, the ECJ held that the combustion in Belgian cement works of German waste had to be regarded as a recovery operation since these chemical wastes could replace primary energy sources for heating cement kilns. The administrative circulars adopted by the German Länder specifying additional criteria for distinguishing between recovery and disposal were not therefore relevant for the classification of the planned movements (Case C-228/00). By contrast, ruling on household waste produced by the Grand-Duchy of Luxembourg and destined for recovery in an incinerator located in Strasbourg in France, the Court of Justice held that the primary purpose of the Alsatian incinerator was thermal treatment with a view to the mineralization of the waste and

not the production of energy (Case C-458/00). But in contrast with the cement works, the purpose of which was the production of cement, the only objective of the Strasbourg incinerator was the disposal of waste.

In this respect, it is again important to stress that the identification of the party who bears the costs of incineration may serve as an indication as to the principal objective of the relevant operation. Where contracts concluded between waste holders and incinerator operators provide for the payment of a sum by the holders to the operators, such payments may support the view of the administrative authorities that the relevant operation is for disposal and not recovery¹¹⁴.

i. Classification of an operation involving several phases

When waste treatment processes abroad entail various phases which may be classified either as recovery or as disposal operations, there is an important question as to the classification of the operations at issue. Such an eventuality is by no means a rarity. Indeed, waste recovery operations involving energy recovery may be followed by disposal operations for the residual waste, such as bottom ash, which is generally buried in landfills. Ruling on a preliminary reference from the Dutch Council of State, the Court of Justice held that the classification of the first operation was the only relevant one for establishing the purpose of the planned transfer. Since Regulation 259/93 distinguishes between the transfer of waste destined for disposal from the transfer of waste destined for recovery, it "is directed at the treatment which that waste must undergo when it arrives at its destination, not the possible subsequent processing of waste which has been thus treated or to its residues. Moreover, that processing may take place in a different treatment plant and following further shipment"¹¹⁵.

¹¹¹ Sita EcoService Nederland, *supra* note 90, para. 41; C-228/00 – Commission v Germany, para. 43; Commission v Luxembourg, para. 34.

¹¹² Case C-228/00 – Commission v Germany, para. 46; C-458/00 – Commission v Luxembourg, para. 36.

¹¹³ C-228/00 – Commission v Germany, para. 47.

¹¹⁴ See Advocate General Jacobs' Opinion in Commission v Luxembourg, para. 45.

¹¹⁵ Sita EcoService Nederland, *supra* note 90, para. 46.