

## *The Human Right to Sustainable Environment: Emerging Trends*

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# The End-of-Waste for the Transition to Circular Economy: A Legal Review of the European Union Waste Framework Directive

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**Abstract.** The generation of waste is certain and unavoidable. Waste will always exist in some form. It is, however, possible to minimize waste generation and thereby improve virgin resource utilization. Within the European Union, the concept of End of Waste is a legal instrument adopted to facilitate the transition from waste to product, thus by extension facilitate the conditions for a circular economy. In this paper, the implications of the legal definition transforming waste to product, End of Waste, is discussed against the backdrop of waste as a potential resource. Through legal analysis, three primary issues regarding the current formulation of article 6(1) of the Waste Framework Directive (2008/98/EC) are highlighted: (1) the cumulative conditions stated in article 6(1) creating (unnecessary) bottlenecks; (2) the fact that the conditions for End of Waste originally were intended to be operationalized through legislative acts, such as the regulation for iron scrap or glass cullet; and (3) the fact that there is no clear indication of what level of proof the conditions stated in article 6(1) requires and the ambiguity of its application this implies in general. The fact that there must be a specified use as well as a market for a ‘waste’ to transform into something else implies that the underlying idea of the incorporation of End of Waste loses some of its meaning.

Keywords: European Union, end-of-waste, circular economy, Waste Framework Directive, Court of Justice

## 1. Introduction

Waste is and will always be problematic since it essentially is something unwanted. It constitutes both a source of pollution and a potential loss of resources.<sup>1</sup> To define clearly what constitutes waste is therefore an equally challenging and important task. Within the European Union (EU) a number of judgements by the Court of Justice of the European Union (CJEU) illustrates this and the CJEU has consistently upheld an extensive interpretation of the waste definition in accordance with the precautionary principle. The legal intersection between waste and product does not only formally create ‘barriers’ regarding *inter alia*: marketability, transboundary shipments, storage, and liability,<sup>2</sup> but also informally through public perception.<sup>3</sup> The extensive interpretation of ‘waste’ can

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1 Tromans, S. (2001) EC Waste Law - A Complete Mess, *Journal of Environmental Law*, Vol 13, No 2, p. 133.

2 E.g., Judgment of 28 March 2019, *AS Tallinna Vesi AS v Keskkonnaamet*, C-60/18. EU:C:2019:264.; Judgment of 12 December 2013, *Shell Nederland Verkoopmaatschappij NV and Belgian Shell NV*, Joined C-241/12 and C-242/12, EU:C:2013:821; Judgment of 4 July 2019, *Criminal proceedings against Tronex BV*, C-624/17, EU:C:2019:564; Judgment of 15 November 2001, *Abfall Service AG v Bundesminister für Umwelt, Jugend and Familie*, C-6/00, EU:C:2001:610; Judgment of 24 June 2008, *Commune de Mesquer v Total France SA, Total International Ltd*, C-188/07, EU:C:2008:359.; Judgment of 17 November 2022, *Porr Bau C-238/21*, ECLI:EU:C:2022:885.

3 According to previous research there is a ‘stigma’ attached to waste-based products. The European Commission’s Joint Research Centre (JRC) claimed in 2008 that removal of the waste status (i.e., the stigma) will improve public perception of the products derived

possibly result in redundant regulation of ‘materials’ that are otherwise harmless and may in large constitutes a detriment to the fulfillment of a circular economy. To clarify the line between what is, and what is not, waste and simplify the assessment procedure, the legal concept of *End of Waste* was introduced in the 2008 Waste Framework Directive<sup>4</sup> (WFD).

The incorporation of End of Waste into the 2008 WFD was not intended to bring the end of *all* waste. It was however intended to codify the pathway out of waste and create a level playing field and promote ‘waste-based’ products – in essence it was initially a tool to promote circular material flows by establishing technical criteria.<sup>5</sup> One underlying theme of the 2008 WFD was to create a legal framework that overall encourages a life-cycle approach in waste policies.<sup>6</sup> To achieve this, an important task was to modernize, and, perhaps most importantly, to clarify and simplify many of the concepts and definitions of the EU waste legislation.<sup>7</sup> Prior to the adoption of the 2008 WFD, member states, operators and individuals were in various situations left with uncertainty regarding the application of the waste legislation. One recurring critique of EU waste legislation before the 2008 WFD has been its complexity and vagueness.<sup>8</sup> It was for instance not stated explicitly in the legislation what a recovery<sup>9</sup> or a disposal<sup>10</sup> operation entailed; this was instead regulated via the directive’s annexes through non-exhaustive lists. The consequences of this uncertainty can be illustrated by the case C-60/00, *Abfall Service ASA* which highlights the importance of nuance. The conflict arose when an Austrian waste handler, Abfall Service (the operator), had notified German authorities of an incoming waste shipment consisting of “slag and ashes produced as a by-product” to be deposited in a former salt-mine to secure hollow spaces (i.e., to serve as mine-sealing). The shipment had been classified as waste for recovery by the operator (Code R 5 Annex II B). However, the following was explicitly mentioned as a disposal operation in Annex II A of the old directive: “[p]ermanent storage (e.g., emplacement of containers in a mine, etc.)”. This led the German supervisory authority to question the classification of the activity as a recovery operation. In essence, an activity which fulfilled a useful purpose was defined as a non-useful operation (i. e. a disposal operation). The Court however, stated that the indexes are merely intended as illustrative examples for various operations and thus concluded that the purpose of the annexes is “. . . not precisely and exhaustively to specify all the disposal and recovery operations . . . ” The Court did not decide the question of whether the activity was a disposal or recovery operation but referred the case back to the national court. This nevertheless highlights the obfuscation with the previously list-based system, especially when it comes to the actual application of and supervision of the law.

from waste (Delgado, L. Catarino, A-S. Eder, P. Litten, D. Zheng, L. Villanueva, A. *End of waste Criteria Final Report* (Report no EUR 23990 EN – 2009). European Commission Joint Research Centre, pp. 18-20). The results of lacking public perception has been researched extensively regarding the use of, for instance, sewage sludge on arable soil in Sweden (i.e., Waste-to-Product) and Ekane et al. concludes that: “. . . individuals do not rely only on risk management information they receive concerning excreta and related risks but also depend, to an extent, on their feelings about these substances when making judgements and decisions regarding the purpose for using excreta as fertilizer and the level of exposure they can tolerate and manage.” The authors furthermore conclude that it is not in general the contents of the substance that decides individual perception but rather its origin or label (Ekane, N. Barquet, K. and Rosemarin, A. (2021) Resources and Risks: Perceptions on the Application of Sewage Sludge on Agricultural Land in Sweden, a Case Study. *Frontiers in Sustainable Food Systems*. 5 : 647780, p. 5).

- 4 Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives, OJ L 312, 22.11.2008, p. 3–30.
- 5 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and The Committee of the Regions - *Taking sustainable use of resources forward - A Thematic Strategy on the prevention and recycling of waste* {SEC(2005) 1681} {SEC(2005) 1682} /\* COM/2005/0666 final \*/. p. 13; Zorpas, A. (2016) Sustainable waste management through end of waste criteria development, *Environmental Science and Pollution Research*, p. 1.
- 6 Johansson, N. & Forsgren, C. (2020) Is this the end of end of waste? Uncovering the space between waste and products. *Resources, Conservation & Recycling* 155, 104656; COM(2005)0666 final, p. 7.
- 7 Commission Staff Working Document Accompanying the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Thematic Strategy on the Prevention and Recycling of Waste COM(2011) 13 final, p. 7.
- 8 Tromans, 2001 p. 134; Laurence, D. (1999) *Waste Regulation Law*, London, p. 5.
- 9 Council Directive 75/442/EEC of 15 July 1975 on waste, OJ L 194, 25.7.1975, p. 39–41, Annex II B.
- 10 Council Directive 75/442/EEC of 15 July 1975 on waste, OJ L 194, 25.7.1975, p. 39–41, Annex II A.

The WFD has been amended four times since its entry into force in 2008.<sup>11</sup> Considering the implications of the waste definition and the ambiguity of the application of End of Waste there is ample room for discussion. This paper will discuss this ambiguity.

The aim of this paper is first to analyze why the concept of End of Waste was incorporated into the WFD to establish its legal function, and secondly to discuss the suitability of the tool - has it helped to clarify the distinction between waste and product, thereby increasing legal certainty.

## 2. Beginning of the End (of Waste)

Naturally, waste has always been able to transition from waste into something else – i.e., attain full recovery – with the first recorded case being recycling of paper in Japan in the 11<sup>th</sup> century.<sup>12</sup> It is often intuitive what waste is and what it is not. Tossing a cup in a garbage bin clearly indicates that the cup is waste while selling or gifting the same cup to someone else indicates that it is not. In the same vein, retrieving the cup from the garbage bin and cleaning it indicates that it has transformed from a waste to something else. Capturing this intuitive transformation in a meaningful legal definition, however, has proven challenging. Before the adoption of the new WFD in 2008 there was no clear legal boundary between a waste and a waste that had been adequately treated and thus ‘transformed’ into a product.<sup>13</sup>

From a legal perspective, according to article 3(1) WFD, waste is something that the holder discards, intends to discard or has to discard.<sup>14</sup> It is an action – to discard – and not the characteristics of an object, such as economic value or toxicity levels, that ultimately determines whether the object is waste or not.<sup>15</sup> Objects can easily end up as waste, thus being subject to the waste legislation, as the only requirement is that it is discarded by its holder. However, the pathway to non-waste, thus transforming from waste to product, is not as simple. There is in principle three ways ‘out’ of the classification of waste according to the WFD. First, an object can by derogation be excluded from the scope of the WFD in accordance with article 2. Mining waste does not for instance constitute ‘waste’ in accordance with article 2(d) to the extent it is covered by the Extraction Waste Directive.<sup>16</sup> Second, an object can, by fulfilling criteria stated in article 5, be considered a ‘by-product’ instead of a ‘waste’.<sup>17</sup> Third, an object can become an ‘end of waste product’ by achieving end of waste in accordance with article 6. The first two, article 2 and 5, in essence prevents an object from becoming waste in the first place while the third, article 6, provides a pathway out of waste.

The concept of end of waste was first officially mentioned on the EU legislative agenda in the 2005 strategy *Taking sustainable use of resources forward: A Thematic Strategy on the prevention and recycling of waste*. It was in the strategy document proposed as a legislative tool to promote a life-cycle approach. Difficulties in determining

- 11 Regulation No 1357/2014 altered annex III of the WFD and the characteristics of hazardous wastes. Directive 2015/1127 altered annex II of the WFD and added an energy efficiency formula. Regulation No 2017/997 altered annex III by including clarifications regarding the term ‘Ecotoxic’. The latest amendment is Directive 2018/851 which included more comprehensive changes. The changes included amending article 6 – End of Waste – which will be discussed in this paper. Further changes to the WFD are planned to be presented in 2023.
- 12 Hunter, D. (1957) *Papermaking: The History and Technique of an Ancient Craft*, 2nd ed, p. 54.
- 13 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and The Committee of the Regions - *Taking sustainable use of resources forward - A Thematic Strategy on the prevention and recycling of waste* {SEC(2005) 1681} {SEC(2005) 1682} /\* COM/2005/0666 final \*//, p. 13.
- 14 These are commonly divided into two groups: subjective waste (discard or intention to discard) and objective waste (has to discard).
- 15 Whether an object constitutes waste has been subject to CJEU assessment on several occasions see *inter alia*: Judgment of 18 April 2002, *Palin Granit and Vehmassalon kansanterveystyön kuntayhtymän hallitus*, C-9/00, EU:C:2002: 232, Judgment of 7 September 2004, *Criminal proceedings against Paul Van de Walle, Daniel Laurent, Thierry Mersch and Texaco Belgium SA*, Case C-1/03, EU:C:2004: 490., Case C-188/07 *Commune de Mesquer*, Judgment of 28 March 1990, *Criminal proceedings against G. Vessoso and G. Zanetti*, Joined cases C-206/88 and C-207/88, EU:C:1990: 145, Judgment of 18 December 1997, *Inter-Environnement Wallonie ASBL v Région wallonne*. Case C-129/96, EU:C:1997: 628., Judgment of 12 December 2013, *Shell Nederland Verkoopmaatschappij NV and Belgian Shell NV*, Joined C-241/12 and C-242/12, EU:C:2013: 821.and more recently Judgment of 4 July 2019, *Criminal proceedings against Tronex BV*, C-624/17, EU:C:2019: 564.
- 16 Directive 2006/21/EC of the European Parliament and of the Council of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC, OJ L 102, 11.4.2006, p. 15–34.
- 17 It is perhaps ill fitting to call the ‘by-product’-status an exclusion from the definition of waste as it rather serves as a rule of interpretation to determine whether an object is waste in the first place.

when waste ceased to be waste gave cause to administrative costs and increased market uncertainty.<sup>18</sup> There is, however, also an argument to be made that a more formal end of waste process increases costs for operators due to more costly waste management operations, for instance selective demolition. It was estimated in 2005 by Dantata et al. that costs associated with selective demolition could be 17–25% higher than for normal demolition.<sup>19</sup> It was nevertheless determined that a lack of a clear ‘end of waste’ often led to diverging views on EU level between member states and in turn resulting a dysfunctional inner market.<sup>20</sup>

According to the European Commission few waste streams were in large affected by these issues which is why a two-part criteria system was proposed: 1. establish a procedure for adaptation in the WFD; 2. develop specific criteria concerning the specific waste streams (initially compost, recycled aggregates, and the use of tallow as a fuel). This two-part approach was intended to both reduce the legal barriers of handling the aforementioned waste streams and to create incentives for producers to create ‘products’ that could easily comply with the end of waste criteria, thus ceasing to be waste.<sup>21</sup>

The criteria was, according to the original wording of article 6(1)<sup>22</sup> of the WFD, to be developed in accordance with the following four conditions:<sup>23</sup> (1) the substance or object is commonly<sup>24</sup> used for specific purposes; (2) a market or demand exists for such a substance or object; (3) the substance or object fulfils the technical requirements for the specific purposes and meets existing legislation and standards applicable to products; and (4) the use of the substance or object will not lead to overall adverse environmental or human health impacts. While (1) and (2) primarily guarantees that there is an actual use for the ‘waste’ after end of waste, (3) and (4) guarantees that the use is lawful and environmentally justifiable.<sup>25</sup> It is important to emphasize that these four conditions were meant to serve as a foundation when *adopting criteria* for specific waste streams. For example, Council Regulation (EU) No 333/2011/EU contains detailed conditions which determines when iron scrap ceases to be waste (e.g., total content of foreign material shall not exceed 2% by weight). The regulation do not require the holder to prove that conditions of article 6(1) WFD are fulfilled, it is only necessary that the holder prove that the specific conditions of the regulation are met (thus in theory minimizing the ambiguity).<sup>26</sup>

At the time of the initial proposal the targeted waste streams were compost, recycled aggregates and the use of tallow as a fuel. In the end, for reasons that will be discussed below, criteria were not developed for any of these waste streams despite the European Commission’s Joint Research Centre (JRC) and researchers proposing criteria for several waste types.<sup>27</sup>

18 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and The Committee of the Regions - *Taking sustainable use of resources forward - A Thematic Strategy on the prevention and recycling of waste* {SEC(2005) 1681} {SEC(2005) 1682} /\* COM/2005/0666 final \*/, p. 13.

19 Zorpas, A. (2016) Sustainable waste management through end of waste criteria development, *Environmental Science and Pollution Research*, DOI: 10.1007/s11356-015-5990-5, p. 6; Dantata, N. Touran, A. Wang, J. (2005) An analysis of cost and duration for deconstruction and demolition of residential buildings in Massachusetts, *Resources, Conservation and Recycling*, Volume 44, Issue 1, pp. 1-15, ISSN 0921-3449, p. 4.

20 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and The Committee of the Regions - *Taking sustainable use of resources forward - A Thematic Strategy on the prevention and recycling of waste* {SEC(2005) 1681} {SEC(2005) 1682} /\* COM/2005/0666 final \*/, p. 13.

21 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and The Committee of the Regions - *Taking sustainable use of resources forward - A Thematic Strategy on the prevention and recycling of waste* {SEC(2005) 1681} {SEC(2005) 1682} /\* COM/2005/0666 final \*/, p. 13.

22 Article 6 has since been revised through Directive 2018/851. The changes will be discussed below.

23 The conditions are largely derived from CJEU case law, in particular Judgement of 18 April 2002, *Palin Granit and Vehmassalon kansanterveystyön kuntayhtymän hallitus*, C-9/00, EU:C:2002: 232..

24 The requirement of ‘commonly’ has since been removed through Directive 2018/851.

25 Turunen, T. (2018) *The Concepts of Waste and Non-Waste in the Circular Economy*, University of Eastern Finland, Publications of the University of Eastern Finland, pp. 88 *et seq.*

26 It should however be noted that the current EU-wide End of Waste criteria only applies when waste is transferred from one holder to another. This implies that the criteria are only applicable when a recovery operation is undertaken in various steps between various operators (e.g., articles 3 and 4 Regulation (EU) No 333/2011/EU).

27 See e.g., Johansson, N. & Forsgren, C. (2020) Is this the end of end of waste? Uncovering the space between waste and products. *Resources, Conservation & Recycling* 155, 104656. <https://doi.org/10.1016/j.resconrec.2019.104656>; Villanueva A, Eder P. *End-of-waste criteria for waste plastic for conversion*. Technical proposals. EUR 26843. Luxembourg (Luxembourg): Publications Office of the European Union; 2014. JRC91637; Villanueva A, Eder P. *End-of-waste criteria for waste paper*:

### 3. End of Waste Implemented: Casuistic Approach

The two-part system of criteria entered into force with the new WFD in 2008. The systems overall applicability was, however, as earlier implied, dependent upon specific criteria which, at the time of implementation did not exist. This remained the case until 2011 when the first regulation containing criteria entered into force in accordance with the projected timetable.<sup>28</sup> In subsequent years, two additional regulations entered into force resulting in three waste streams being covered on EU-level: copper and iron scrap (including steel and aluminum) and glass cullet.<sup>29</sup> As of Regulation (EU) 2019/1009 end of waste criteria has also been adopted for certain waste-based fertilizer.<sup>30</sup> Nevertheless, the methodology for selection was based upon the fact that not all types of waste could or should cease to be waste – according to article 1 of the WFD the main purpose of the waste legislation and by extension the definition of waste is to protect human health and the environment as a whole – thus some objects (waste) should remain as waste.<sup>31</sup> Furthermore, the JRC suggested that end of waste criteria should be developed for several different waste streams and sub-fractions of waste streams depending on the ability to create feasible criteria.<sup>32</sup> It was, for instance, considered more appropriate to establish separate criteria for relatively clean household plastic waste and other plastic waste than for rubber-tires (due to the high energy demand when not energy recycling and the tires high potential use as an energy source).<sup>33</sup>

Developing criteria proved to be a difficult task. Due to the mixed nature of waste (both in sources and in composition) and variance in data-collection between member states, it was challenging to find appropriate and reliable data throughout the EU (available data varied to a high degree between waste streams and countries).<sup>34</sup> This still holds true, and some waste streams more or less lack reliable data all together such as drilling waste from oil and gas exploitation.<sup>35</sup> The lack of reliable data led to difficulties in determining which waste streams were suited for criteria and to some waste streams not being evaluated at all. Because of the requirements in article 6(1) of the WFD it is a prerequisite that the characteristics of the waste streams that will be subject to end of waste regulations is determined beforehand. These characteristics range from hazardousness, recyclability

Technical proposals. EUR 24789 EN. Luxembourg (Luxembourg): Publications Office of the European Union; 2011. JRC64346; Zorpas, A. (2016) Sustainable waste management through end of waste criteria development, *Environmental Science and Pollution Research*, DOI: 10.1007/s11356-015-5990-5. Kazamias, G. Zorpas, (2021) A. Drill cuttings waste management from oil & gas exploitation industries through end-of-waste criteria in the framework of circular economy strategy, *Journal of Cleaner Production*, Volume 322, <https://doi.org/10.1016/j.jclepro.2021.129098>; Górak, P. Postawa, P. Trusilewicz, L-N. (2020) Lightweight composite aggregates as a dual end-of-waste product from PET and anthropogenic materials, *Journal of Cleaner Production*, Volume 256, <https://doi.org/10.1016/j.jclepro.2020.120366>.

- 28 Council Regulation (EU) No 333/2011 of 31 March 2011 establishing criteria determining when certain types of scrap metal cease to be waste under Directive 2008/98/EC of the European Parliament and of the Council, OJ L 94, 8.4.2011, p. 2–11; Commission Regulation (EU) No 715/2013 of 25 July 2013 establishing criteria determining when copper scrap ceases to be waste under Directive 2008/98/EC of the European Parliament and of the Council, OJ L 201, 26.7.2013, p. 14–20.; Commission Regulation (EU) No 1179/2012 of 10 December 2012 establishing criteria determining when glass cullet ceases to be waste under Directive 2008/98/EC of the European Parliament and of the Council, OJ L 337, 11.12.2012, p. 31–36.
- 29 Commission Staff Working Document Accompanying the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the Thematic Strategy on the Prevention and Recycling of Waste COM(2011) 13 final.
- 30 Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilizing products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003 OJ L 170, 25.6.2019, p. 1–114 which entered into force on 22th of July 2022 grants the possibility for certain waste-based fertilizers to achieve end of waste status in accordance with article 19 of that regulation.
- 31 Delgado, L. Catarino, A-S. Eder, P. Litten, D. Zheng, L. Villanueva, A. (2009) *End of waste Criteria Final Report* (Report no EUR 23990 EN – 2009). European Commission Joint Research Centre, p. 292.
- 32 Villanueva, A. Delgado, L. Zheng, L. Eder, P. Catarino, A-S. Litten, D. (2010) *Study on the selection of waste streams for end of waste assessment* (Report no EUR 24362 EN – 2010) European Commission Joint Research Centre, pp. 61-62.
- 33 Villanueva, A. Delgado, L. Zheng, L. Eder, P. Catarino, A-S. Litten, D. *Study on the selection of waste streams for end of waste assessment* (Report no EUR 24362 EN – 2010) European Commission Joint Research Centre, p. 61.
- 34 Villanueva, A. Delgado, L. Zheng, L. Eder, P. Catarino, A-S. Litten, D. *Study on the selection of waste streams for end of waste assessment* (Report no EUR 24362 EN – 2010) European Commission Joint Research Centre, pp. 79 & 133.
- 35 Kazamias, G. Zorpas, (2021) A. Drill cuttings waste management from oil & gas exploitation industries through end-of-waste criteria in the framework of circular economy strategy, *Journal of Cleaner Production*, Volume 322, p. 2.

and economic (market) value. But perhaps most importantly it was a challenge to reach consensus between the member states.<sup>36</sup>

As a ‘pressure valve’ the following provision was included original articulation of article 6(4) in the WFD “[m]ember States may decide case by case whether certain waste has ceased to be waste taking into account the applicable case law.” The European Commission must be notified of any such national decision or provision in accordance with the TRIS-Directive.<sup>37</sup> This provision has since been amended and article 6(4) no longer requires Member States to notify the commission of case-by-case decisions. However, the Member States still have to notify the commission of legislative acts containing end of waste criteria in accordance with the procedures in the TRIS-Directive.

The TRIS-database<sup>38</sup> contains 74 reported actions connected to the keyword “end of waste” (as of 2023-03-26), the first being reported in 2007.<sup>39</sup> All of the reported actions concern some form of general provision that directly or indirectly<sup>40</sup> concern end of waste for specific waste streams (e.g., “... the inert non-hazardous component of street sweeping waste”) as opposed to case-by-case decisions. The reported actions are heterogeneous and vary between member states in number of notifications (i.e., waste streams covered by end of waste-provisions), targeted waste streams (i.e., different streams are covered) and requirements (i.e., the requirements for end of waste vary between member states). Only 19 (20 including Britain pre-Brexit) out of the now 27 member states have reported any form of end of waste provision in accordance with the notification procedure stated in article 6(4) of the WFD.<sup>41</sup>

Austria has for example notified the commission of end of waste criteria for waste wood and other fuel products.<sup>42</sup> Similar criteria has been notified by France, however, the French provisions only covers “wooden packaging waste” (as opposed to the broader Austrian legislation covering “fuel products from waste wood”).<sup>43</sup> Not only the scope of application varies between the Austrian and French regime, but also the requirements thereof and how said requirements are determined; the Austrian legislation *inter alia* proposes limit values of a *median* content of lead (Pb) content of 10 (mg/kg dry weight) whereas the French proposes a *maximum* content of Pb of 50 (mg/kg dry weight). This can be contrasted with Sweden which for instance has not notified any specific provision and the Swedish Environmental Protection Agency (SEPA) holds a *laissez faire* approach stating that it is the operator who decides whether end of waste has been achieved or not and that it is not upon the supervisory authority to provide decisions.<sup>44</sup>

Nevertheless, as one of the main functions of legally defining end of waste initially was to create certainty and provisions for a functioning inner market; different implementations of end of waste criteria remains a problem yet to be solved.<sup>45</sup> In March 2022 the EU Commission published the “EU Strategy for Sustainable and Circular

36 Johansson, N. & Forsgren, C. (2020) Is this the end of end of waste? Uncovering the space between waste and products. *Resources, Conservation & Recycling* 155, 104656. <https://doi.org/10.1016/j.resconrec.2019.104656>.

37 Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services, OJ L 241, 17.9.2015, p. 1–15.

38 The TRIS-database is an archive for notifications to the commission and can be accessed through: <https://ec.europa.eu/growth/tools-databases/tris/> (as of 2023-03-26).

39 <https://ec.europa.eu/growth/tools-databases/tris/en/search/?trisaction=search.results#> (accessed 2023-03-26)

40 Two of the reported actions are for instance a Portuguese enactment of a fertilizer laws not directly targeting End of Waste (Communication from the Commission - TRIS/(2019) 01689, Directive (EU) 2015/1535 Translation of the message 001, Notification: 2019/0296/P and Communication from the Commission - TRIS/(2019) 01692, Directive (EU) 2015/1535 Translation of the message 001, Notification: 2019/0297/P).

41 For a more thorough account of MS implementation of End of Waste see European Commission, Directorate-General for Environment (2020). Study to assess member states (MS) practices on by-product (BP) and end-of waste (EoW): final report, Publications Office, 2020.

42 Communication from the Commission - SG(2009) D/52732, Directive 98/34/EC, Translation of the message 001 Notification: 2009/0633/A.

43 Communication from the Commission - TRIS/(2014) 00883, Directive 98/34/EC Translation of the message 001 Notification: 2014/0144/F.

44 Swedish Environmental Protection Agency (SEPA) (2022), När Avfall Upphör att Vara Avfall (available at: <https://www.naturvardsverket.se/vagledning-och-stod/avfall/nar-avfall-upphor-att-vara-avfall/>)

45 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and The Committee of the Regions - *Taking sustainable use of resources forward - A Thematic Strategy on the prevention and recycling*

Textiles” which contains a call for research, “LIFE”, the scope of which *inter alia* includes end of waste criteria for textiles. The Commission furthermore proclaims at 4.2 that “[we] will consider the development of specific EU level criteria to make a distinction between waste and certain second-hand textile products.”<sup>46</sup> It does remain to be seen whether end of waste criteria for textiles will become reality or if it will suffer the same fate as the criteria proposed for compost and digestate.

#### 4. End of Waste Revised: Criteria to Cases

Some authors have argued that the criteria-based end of waste has failed to solve the issues of uncertainty it initially was proposed to solve.<sup>47</sup> Regardless, the legislator has shifted the responsibility to enact legislation concerning end of waste from union-level to individual member states as the current, revised, end of waste definition in article 6(1) of the WFD reads as follows:

“Member States shall take appropriate measures to ensure that waste which has undergone a recycling or other recovery operation is considered to have ceased to be waste if it complies with the following conditions:

- (a) the substance or object is to be used for specific purposes;
- (b) a market or demand exists for such a substance or object;
- (c) the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products; and
- (d) the use of the substance or object will not lead to overall adverse environmental or human health impacts.”

This definition was given its current meaning in 2018 through the amendments included in the circular economy package via Directive 2018/851.<sup>48</sup> The revision meant that the original requirement of end of waste being reliant upon specific criteria was removed, thus making it generally applicable on a case-by-case basis (through the wording “shall take appropriate measures”). The reason for this, according to the preamble of the directive is *inter alia*: “to provide operators in markets for secondary raw materials with more certainty as to the waste or non-waste status of substances or objects and to promote a level playing field . . .”<sup>49</sup> This is to be achieved by member states taking appropriate measures to ensure that waste, if *all* the conditions laid down in article 6(1) are met, ceases to be waste.<sup>50</sup> The provisions of article 6(1) are therefore still cumulative which implies that the issues previously stated by the JRC still applies.<sup>51</sup>

In the JRC study the authors state: “. . . how can one document that a substance or object is *commonly* [my own emphasis] used for a specific purpose?”<sup>52</sup> To lighten the burden of proof, the initial requirement of the waste being *commonly* used for specific purposes (i.e., article 6(1a) of the WFD) was altered and the requirement to prove that the use is common was removed. The rationale behind this is that the requirement to prove not only that waste would be used but also that said use is common created a situation where a waste that had a clear use would not cease to be waste because the use was not common.<sup>53</sup> This led to an unnecessary burden of proof, as

*of waste* {SEC(2005) 1681} {SEC(2005) 1682} /\* COM/2005/0666 final \*/, pp. 5 & 13.

46 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – EU Strategy for Sustainable and Circular Textiles. COM(2022) 141 final, at 4.2.

47 Johansson, N. & Forsgren, C. (2020) Is this the end of end of waste? Uncovering the space between waste and products. *Resources, Conservation & Recycling* 155, 104656. <https://doi.org/10.1016/j.resconrec.2019.104656>.

48 Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste, OJ L 150, 14.6.2018, p. 109–140.

49 Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste, OJ L 150, 14.6.2018, p. 109–140, preamble 17.

50 Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste, OJ L 150, 14.6.2018, p. 109–140, preamble 17.

51 Villanueva, A. Delgado, L. Zheng, L. Eder, P. Catarino, A-S. Litten, D. *Study on the selection of waste streams for end of waste assessment* (Report no EUR 24362 EN – 2010) European Commission Joint Research Centre.p 29.

52 Villanueva, A. Delgado, L. Zheng, L. Eder, P. Catarino, A-S. Litten, D. *Study on the selection of waste streams for end of waste assessment* (Report no EUR 24362 EN – 2010) European Commission Joint Research Centre.p. 29.

53 Turunen, T. *The Concepts of Waste and Non-Waste in the Circular Economy*, University of Eastern Finland, 2018, Publications of the University of Eastern Finland, p. 91.

it is not always necessary to prove that a use is common if it is possible to prove a use to uphold the purpose of the waste definition (i.e., protection of the environment and human health). This reasoning is entirely rational considering that the CJEU has stated in e.g., case C-624/17 *Tronex* that the interpretation of the waste definition itself should be based upon all the relevant circumstances to ensure the WFDs effectiveness is not undermined.<sup>54</sup> Likewise, it can be argued that conditions which are not necessary to ensure the effectiveness of the WFD should be avoided. A similar conclusion has recently been made by the CJEU in Case C-238/21 *Por Bau* where the court states, regarding criteria in national legislation, that formal criteria hindering the re-use of high-quality soil with a clear use would undermine the effectiveness of the WFD.<sup>55</sup>

Considering the overall rationale behind the revision of article 6(1a) it is somewhat confusing that the requirement of a market or demand in article 6(1b) of the WFD was not altered. The provisions of article 6(1b) creates, in theory, precisely the same issues the legislator wanted to avoid by removing the requirement to prove that the use is common namely: waste that has a clear use may not cease to be waste due to the inability to prove that a demand or market exists. In connection to this it is important to highlight that there is no hard law sources that explains what proof and what level of proof is needed to achieve the conditions stated in article 6(1) (a)-(d) WFD.

Indicators of what is needed for end of waste to be achieved has seemingly eluded assessment by the CJEU. This ‘gap’ *inter alia* raises the question of the value of the waste. Is it possible to fulfill the ‘demand or market’ criterion if the price of the waste-based product or material is zero or negative? There are indications that regarding article 6(1b) (i.e., market or demand) the holder must normally show a positive market price paid,<sup>56</sup> or the existence of trading specifications or standards.<sup>57</sup> It is however not uncommon that waste-based products or materials, such as compost, digestate or fertilizer derived from sewage sludge, inherent a monetary value close to or at zero (often negative).<sup>58</sup> Against the backdrop of the circular economy, it can be argued that the requirement to show a demand or market is unnecessary. The CJEU has previously concluded in Joined Cases C-206/88 and C-207/88 *Vessoso and Zanetti* that economic value has no bearing on whether a substance or object should be considered as waste. A contrario, a substance or objects monetary value should not necessarily be detriment to whether that substance or object can transform from a waste to something else.

In short, the requirement of a market or demand introduce a large degree of subjectivity that results in much risk for the operators who must both decide and prove that the requirements are fulfilled. Despite the fragmented existence of guidance documents or notification procedures throughout the EU operators are often left open to future challenges (of their assessments validity) by the supervisory authorities.<sup>59</sup> In essence the requirement of market and demand may impose a catch 22 – there is no demand because the object is waste, and the object cannot cease to be waste because there is no demand – and because the requirements are cumulative this criterion would create a bottleneck. A bottleneck that perhaps is unnecessary.

54 The CJEU has prior to its verdict in *Tronex* reached similar conclusions see: Judgement of 15 June 2000, *ARCO Chemie Nederland Ltd v Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer and Vereniging Dorpsbelang Hees, Stichting Werkgroep Weurt+ and Vereniging Stedelijk Leefmilieu Nijmegen v Directeur van de dienst Milieu en Water van de provincie Gelderland*, Joined C-418/97 and C-419/97, EU:C:2000 : 318, paras 73, 88 and 97; Judgement of 18 April 2002, *Palin Granit and Vehmassalon kansanterveysystön kuntayhtymän hallitus*, C-9/00, EU:C:2002 : 232., para 24; Judgment of 10 February 2009, *Commission of the European Communities v Italian Republic*, C-110/05, EU:C:2009 : 66, para 41; and Judgement of 12 December 2013, *Shell Nederland Verkoopmaatschappij NV and Belgian Shell NV*, Joined C-241/12 and C-242/12, EU:C:2013 : 821. para 40.

55 Judgment - 17/11/2022 - *Por Bau* Case C-238/21, ECLI:EU:C:2022 : 885. paras 74-75.

56 European Commission (2012): Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste; Zorpas, A. (2016) Sustainable waste management through end of waste criteria development, *Environmental Science and Pollution Research*, DOI: 10.1007/s11356-015-5990-5 p. 2; Saveyn H, Eder P. End-of-waste criteria for biodegradable waste subjected to biological treatment (compost and digestate): Technical proposals. EUR 26425. Luxembourg (Luxembourg): Publications Office of the European Union; 2013. JRC87124., pp. 31-32.

57 European Commission (2012): *Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste*.

58 Regarding digestate and compost see: Saveyn H, Eder P. *End-of-waste criteria for biodegradable waste subjected to biological treatment (compost and digestate)*: Technical proposals. EUR 26425. Luxembourg (Luxembourg): Publications Office of the European Union; 2013. JRC87124., p. 121. Regarding sewage sludge-based fertilizer see: Statens Offentliga Utredningar (SOU) 2020 : 3 Sustainable Sludge Management (available in Swedish) where some referral bodies (in particular Polonite AB) highlighted that Swedish farmers regularly get compensation for receiving treated sewage sludge as fertilizer, i.e., the ‘waste’ in question has a negative economic value.

59 Ragossnig AM, Schneider DR. (2020) Circular economy, recycling and end-of-waste. *Waste Manag Res.* 2019 Feb;37(2):109-111.



It may thus be argued that if the requirements are excessive and that the foundational requirements for end of waste stated in article 6(1) WFD being “... waste which has undergone a recycling or other recovery operation is considered to have ceased to be waste...” is already enough. If a waste undergoes a recovery operation it is per definition useful for a specific purpose (because *recovery*, as defined in article 3(15) WFD and CJEU case law entails waste serving a useful purpose by substitution).<sup>60</sup> The legal term recovery is further commented in the WFD Guidance Document where the authors state: “[t]he [WFD] definition of recovery [...] includes not only processes where a material is actually substituting other materials, but also processes preparing a waste material in such a way that it no longer involves waste-related risks and is ready to be used as raw material in other processes.”<sup>61</sup> This statement implies that it is not only factual use that determines whether a recovery operation has been completed but also whether the waste-related risks are eliminated.

The relationship between the requirement of recovery and the cumulative conditions in article 6(1)(a-d) reinforces the JRCs statement that the four conditions originally should have served as an underlying foundation when creating ‘operational indicators’ i.e., the criteria should be made operational through legislative acts.<sup>62</sup> This statement is very much in line with the case law that the provisions largely are derived from.<sup>63</sup> Regardless, the CJEU has in Case C-629/19 *Sappi* given the provisions independent significance by their conclusion that an object (in that case sewage sludge) should not be considered as waste if the conditions in article 6(1) of the WFD are met.<sup>64</sup>

*Sappi Austria Produktions-BmbH & Co. KG* (the Operator) had altered one of their paper-production plants to include co-incineration of both waste from the paper-production (about 97%) and separately collected sewage sludge (about 3%). The supervisory authority decided that the additional incineration required a separate permit. This decision was appealed by the Operator and in 2016 – which is why the CJEU’s assessment concerns the old wording of article 6(1) WFD (as illustrated by para 64) – the appeal was upheld by the Supreme Administrative Court.

The CJEU concludes that the amount (i.e., 3 % of total content) of sewage sludge in relation to waste from paper-production is irrelevant because the waste water from the paper-production is not separable from the residential or municipal waste water.<sup>65</sup> The CJEU has previously reached this conclusion regarding whether crude oil that is accidentally mixed with water constitutes waste.<sup>66</sup> The CJEU also clarifies that Article 6(1) of the WFD sets out the conditions to be met by specific end of waste criteria.<sup>67</sup> However, without mentioning the existence of any specific criteria, the CJEU concludes that “... were the referring court to find that the conditions laid down in Article 6(1) [of the WFD] were met before the incineration of the sewage sludge [...] it must be held that the sludge does not constitute waste.”<sup>68</sup>

60 E.g., Judgement of 15 November 2001, *Abfall Service AG v Bundesminister für Umwelt, Jugend und Familie*, C-6/00, EU:C:2001:610. and Order of 27 February 2003, *Oliehandel Koewit BV and Others v Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer*. Joined Cases C-307/00 to C-311/00. EU:C:2003:108.

61 European Commission (2012): Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste., p. 25.

62 Villanueva, A. Delgado, L. Zheng, L. Eder, P. Catarino, A-S. Litten, D. *Study on the selection of waste streams for end of waste assessment* (Report no EUR 24362 EN – 2010) European Commission Joint Research Centre. 2010, p. 29.

63 In particular Judgement of 18 April 2002, *Palin Granit and Vehmassalon kansanterveysyön kuntayhtymän hallitus*, C-9/00, EU:C:2002:232. and Judgement of 15 June 2000, *ARCO Chemie Nederland Ltd v Minister van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer and Vereniging Dorpsbelang Hees, Stichting Werkgroep Weurt+ and Vereniging Stedelijk Leefmilieu Nijmegen v Directeur van de dienst Milieu en Water van de provincie Gelderland*, Joined C-418/97 and C-419/97, EU:C:2000:318, see Van Calster, G. (2014) *EU Waste Law*. Oxford University Press: Oxford. 2014, p. 47.

64 Judgment of 14 October 2020, *Sappi Austria Produktions-GmbH & Co KG and Wasserverband “Region Gratkorn-Gratwein” v Landeshauptmann von Steiermark*, C-629/19. EU:C:2020:824, para 72.

65 Judgment of 14 October 2020, *Sappi Austria Produktions-GmbH & Co KG and Wasserverband “Region Gratkorn-Gratwein” v Landeshauptmann von Steiermark*, C-629/19. EU:C:2020:824, paras 58-59.

66 Judgement of 24 June 2008, *Commune de Mesquer v Total France SA, Total International Ltd*, C-188/07, EU:C:2008:359, para 63.

67 Judgment of 14 October 2020, *Sappi Austria Produktions-GmbH & Co KG and Wasserverband “Region Gratkorn-Gratwein” v Landeshauptmann von Steiermark*, C-629/19. EU:C:2020:824, para 64.

68 Judgment of 14 October 2020, *Sappi Austria Produktions-GmbH & Co KG and Wasserverband “Region Gratkorn-Gratwein” v Landeshauptmann von Steiermark*, C-629/19. EU:C:2020:824, para 69.

The ‘conditions’ stated in article 6(1) has therefore, irrespective of the intended application, according to the CJEU, had independent significance. This conclusion is at odds with a previous preliminary ruling, Case C-358/11 *Lapin*,<sup>69</sup> that will be examined in the following chapter.

## 5. End of Waste in Action: Clarity or Confusion?

There are few judgements by the CJEU where the application of article 6(1) WFD (i.e., ‘end of waste’) has been the primary legal issue and there is for instance only one Swedish case where the potential application directly was the legal issue. There is ample Swedish case law which examines whether an object is waste, or an activity is a recovery or a disposal operation.<sup>70</sup> But the subsequent question: will this recovery operation result in waste attaining end of waste, has, however, not as extensively been subject to the courts assessment.<sup>71</sup> This leaves operators, as previously implied, with uncertainty.

This uncertainty is highlighted in a Swedish legislative preparatory work from 2019 where several referral bodies (sector stakeholders) emphasize the necessity of a decision-making process in which an operator is granted a decision on whether the waste has transformed into a product. The legislator, however, left this question unanswered, stating that it was outside the scope of the investigation.<sup>72</sup> RISE (Research Institutes of Sweden) has reached a similar conclusion in a stakeholder survey conducted in 2020 regarding phosphorous recycling stating that one of the main challenges in connection with legislation for phosphorous recycling was unclarity regard what is waste and is non waste.<sup>73</sup> The same conclusion can be drawn by a missive from SEPA in 2021 where the possibilities for national end of waste criteria was assessed by the authority. It shows that stakeholders considers the general conditions in article 6(1) a-d WFD hard to interpret which leads to a lack of predictability which hinders investments in *inter alia* recycling technologies.<sup>74</sup> In essence, there are indicators that the industry deems the general conditions in article 6(1) a-d as ambiguous which results in: different operators making different assessments and different supervisory authorities making different assessments (under similar circumstances). This results in an end of waste process which implies an inadequate level of legal certainty.

The amended version of end of waste was intended to shift towards national legislation and case-by-case decisions instead of unionwide end of waste regulations.<sup>75</sup> In Sweden, the SEPA and waste management stakeholders are of the opinion that unionwide criteria is preferable to national solutions.<sup>76</sup> The problems arising from a lack of national legislation can furthermore be illustrated by Case C-60/18 *Tallina Vesi*.

The Court of Appeal (of Estonia) requested a preliminary ruling regarding the interpretation of article 6(4) of WFD. The national dispute between Tallinna Vesi (the Operator) and the state concerned management of sewage sludge and the following marketing of said sludge. After a treatment processes the Operator wished to market the treated sewage sludge as ‘greening soil’.

According to the applicable Estonian law the treatment at hand was either classified under code R3o or R12o depending on whether national ‘end of waste’ criteria existed, and ‘end of waste’ could only be achieved if: (1) there is unionwide criteria for such objects or processes or (2) a national regulation containing criteria is in place. Neither (1) or (2) was applicable. The Operator considered the treatment to be ‘biological recycling’ (code R3o) and requested the necessary permit. Due to the lack of national ‘end of waste’ criteria the permit

69 Judgement of 7 March 2013, *Lapin elinkeino-, liikenne- ja ympäristökeskuksen liikenne ja infrastruktuuri –vastuualue v Lapin luonnonsuojelupiiri ry*, C-358/11, EU:C:2013 : 142.

70 E.g., cases: MÖD 2010 : 7; MÖD 2014 : 1, M 1832-17; M 7806-16.

71 There is only one case by the environmental court of appeal (MÖD) where End of Waste was the primary question see MÖD 2021 : 10 (not available in English).

72 Proposition (Government Bill) 2019/20 : 156 *Genomförande av EU-direktiv på avfallsområdet*, pp. 36-37.

73 Kärrman, E., Lundin, E., Westling, K., & Filipsson, S. (2020). *Forskning- och innovationsagenda för återvinning av näringsämnen ur avlopp*. pp. 9 and 15.

74 Swedish Environmental Protection Agency (2021), *Avfall som resurs*, Report no. NV-00196-21 pp. 25 *et seq.*

75 Turunen, T. The Concepts of Waste and Non-Waste in the Circular Economy, University of Eastern Finland, 2018, Publications of the University of Eastern Finland p. 112.

76 Swedish Environmental Protection Agency (2021), *Avfall som resurs*, Report no. NV-00196-21 pp. 25 and 30.

authority classified the operation as R12o ('biological treatment prior to recovery of waste') resulting in the sludge, having undergone the treatment at hand, not receiving an end of waste status. This was in turn disputed by the operator. Thus, two questions were directed to the European Court of Justice:

1. Is the Estonian legislation consistent with article 6 of the WFD if end of waste requires criteria, either unionwide or national, to be achieved?
2. Does the first sentence of article 6(4) grant waste holders a right to apply for a decision by competent authorities or the court to determine the end of waste status?

Regarding the first question the court states, under para 25, "article 6(4) of Directive 2008/98/EC does not, therefore, preclude national legislation under which, where no criteria are laid down on EU level [ . . . ] the end of waste status of waste depends on the existence of criteria laid down in a generally applicable national legal act concerning that type of waste." Regarding the second question the court continues, under para 26–30, to state that due to the verb 'may' in article 6(4) operators have no right to *demand* the recognition of End of Waste by the competent authority.

Thus, if there are no union-wide criteria the Court clarified in *Tallinna Vesi* that it is upon the member states to decide when end of waste is achieved.<sup>77</sup> Furthermore, the applicable iteration of article 6 WFD did not preclude member states to base their end of waste assessment on the requirement of criteria, national or otherwise. If no such criteria existed, the provisions stated in article 6(4) WFD *did not require* member states to determine waste statuses on an individual basis; they *could* however determine such a status on an individual basis. It is important to clarify that the courts verdict in *Tallinna Vesi* is done in accordance with the original wording of article 6 WFD. Which is why their conclusion seemingly creates a dichotomy within the current (amended) wording of article 6 of the WFD – specifically the requirement of "shall take appropriate measures" in paragraph one and "may decide" in paragraph four (as clarified in *Tallinna Vesi*). What the amended provision "shall take appropriate measures", as stated in paragraph one, infer has not yet been subject to CJEU assessment nor the relation to the provisions of "may decide on a case-by-case basis or take appropriate measures . . ." stated in paragraph four.

Due to lack of specific criteria, at least until recently, waste handlers do not have according to EU-law any rights to demand an assessment if a particular treatment process will result in a waste achieving end of waste status. In the case of the Estonian law presented in *Tallinna Vesi* the conclusion is perplexing. If end of waste only can be achieved through union-wide or national criteria it is not possible for waste-streams that are not covered by any such criteria to cease to be waste. The court does comment this in para 26–28 stating that member states are entitled to take the stance that some wastes cannot cease to be waste. This stance is however a contradiction to the purpose of the provisions in article 6 WFD – namely that of providing a pathway out of waste. Due to the fragmented and reactive nature of end of waste regulations (i.e., not all waste streams are covered by such provisions and the establishment of criteria are time consuming and challenging) operators are in theory facing much uncertainty, especially when it comes to innovative use.

In relation to *Tallinna Vesi* the conclusion of the CJEU in Case C-358/11 *Lapin* bears mentioning.

The national dispute that gave cause for a preliminary ruling concerned the use hazardous waste, in the form of old telecommunication poles treated with CCA-solution (copper-chromium-arsenic), for repairing an underlay of a duckboard section of 35 km in proximity of a Natura 2000 zone. The applicant (the Lapland Nature Protection Association) claimed that the telephone poles constituted hazardous waste and requested that the authorities (environmental protection body) prohibit the use the telecommunication poles. This request was rejected by the authorities and the applicant appealed to the Vaasa Administrative Court who annulled the authorities decision. The administrative court's decision was in hereafter appealed by the transport and infrastructure section (the Defendant) to the Supreme Administrative Court who refers the disputes to the CJEU and requests a preliminary ruling.

The national court refers seven questions to the CJEU the core of which are: (1) can hazardous waste cease to be waste in accordance with article 6(1)(d) of the WFD? and (2) does the REACH Regulation allow the use of the telecommunication poles as duckboard underlay?

77 The same conclusion is reached by the CJEU in Judgment of 24 October 2019 *Prato Nevoso Termo Energy Srl v Provincia di Cuneo and ARPA Piemonte*, C-212/18, EU:C:2019 : 898.

First, the court clarifies in para 55 that the criteria stipulated in *the original wording of article 6(1) did not themselves make it possible to directly establish that a certain waste must no longer be regarded as such*. Second, the court concludes in para 59 that “in order to determine whether a recovery operation may transform the object in question into a usable product, it is necessary to determine in the light of all the facts of the case, whether that object may be used in accordance with the requirements of [the WFD], as set out in particular in articles 1 and 13 thereof, without endangering human health or harming the environment.”

In *Lapin* the court confirms the conclusion that the original ‘end of waste criteria’ were merely operational indicators that had to be embodied through legislative acts. As stated by Turunen, the principal result of this is perhaps semantics because Member States had the opportunity to decide on a case-by-case basis taking into account relevant CJEU case law (of which the criteria are based upon).<sup>78</sup> More importantly the court based their conclusion on the requirements of the WFD (i.e., environmental protection) by stating that the object may be used if it poses no harm to human health or the environment.<sup>79</sup> The courts holistic conclusion is at odds with the amended version of article 6 especially considering that the legislator explicitly states that *all* the conditions laid down in article 6(1) must be met.<sup>80</sup> This reinforces the uncertainty regarding end of waste; should the assessment be based upon environmental protection as per Case C-358/11 *Lapin* or on the specific conditions laid down in article 6(1) as per preamble 17 of Directive 2018/851 or on applicable case law as per Article 6(4) of the WFD? Clarity in what is required for end of waste to be achieved is paramount for the ‘end of waste’ definition to be meaningful and appropriate.

## 6. Conclusion

Before the revision of article 6(1) of the WFD it was clear that operators (or anyone else) had according to EU law, to paraphrase the CJEU in *Tallina Vesi*, no rights to demand recognition of end of waste. There were no requirements for member states to decide whether a waste that undergoes a certain treatment process ceases to be waste or not. It was furthermore clearly stated in *Tallinna Vesi* that member states could base their entire end of waste assessment on the existence of national or unionwide ‘end of waste criteria’ with the principal result of some wastes, in theory, not being able to transition out of waste. The revised wording of article 6(1) does however impose an obligation upon member states, namely that of taking appropriate measures to ensure that waste which complies with the requirements of article 6(1) ceases to be waste. Through the revision in 2018 and the introduction of the wording “shall take appropriate measures” in article 6(1) WFD an obligation is imposed upon the member states. Precisely what this obligation infer upon the member states is not yet clear.

In this paper, the concept of End of Waste and its incorporation in the WFD has been analyzed. Three primary issues regarding the current formulation of End of Waste have been highlighted: (1) the cumulative conditions stated in article 6(1) in the WFD, especially the occurrence of bottlenecks; (2) the fact that the conditions for End of Waste was intended to be operationalized through legislative acts, such as the regulation for iron scrap or glass cullet; and (3) the fact that there is no clear indication of what level of proof the conditions stated in article 6(1) requires and the ambiguity of its application in general.

On a normative level, the fact that there must be a specified use and a market for the ‘waste’ implies that the underlying idea of the incorporation of end of waste loses some of its meaning. Especially considering the CJEU has upheld a holistic definition of waste whereas in essence no single condition will be a detriment for an object to defined as waste.<sup>81</sup> A more reasonable approach would perhaps include a shift in the focus towards legal and technical requirements, including the environmental impacts of the product. If a ‘waste’ adheres to

78 Turunen, T. *The Concepts of Waste and Non-Waste in the Circular Economy*, University of Eastern Finland, 2018, Publications of the University of Eastern Finland, p. 66.

79 Judgement of 7 March 2013, *Lapin elinkeino-, liikenne- ja ympäristökeskuksen liikenne ja infrastruktuuri –vastuualue v Lapin luonnonsuojelupiiri ry*, C-358/11, EU:C:2013 : 142, para 55.

80 Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste, OJ L 150, 14.6.2018, p. 109–140, preamble 17.

81 Judgment of 14 October 2020, *Sappi Austria Produktions-GmbH & Co KG and Wasserverband “Region Gratkorn-Gratwein” v Landeshauptmann von Steiermark*, C-629/19. EU:C: 2020 : 824, paras 42-45.

current technical and legal requirements, and thus complies with the requirements set to ensure environmental protection - the primary goal of the waste legislation - there will almost certainly be a use and thus a market or demand for that particular 'waste'. The 'waste' will not be an object that the holder *intends to discard*. Some of the original and current requirements can therefore rather be considered exercises in stating the obvious; if a waste is recovered lawfully in an environmentally sound manner, it ceases to be waste. If this is the case, it can be discussed whether the end of waste instrument has achieved its purpose, or if it is rather a needlessly complicated procedure to achieve something that - with the current legislation - can be achieved anyway. The principal result of end of waste should be that the requirements we impose result in a 'product' that can be used in a safe manner. The existence of a market or a demand is *not always* necessary to achieve this purpose.

While the end of waste as a concept can be considered a much-needed tool for circular material flows, the current adaptation of the tool cannot always be considered appropriate. The lack of clear guidelines on the one hand, and the subjective assessments required on the other hand, has in many cases not resulted in a clear boundary between waste and product.

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