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From Linear to Circular Value Chains: A Role for Tort Liability in Recycling Practices?

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Abstract

This article examines the extent to which tort law can be used to incentivise the creation of the circular value chain and the design of products that live up to the requirements of the circular economy. In doing so, this article focuses in particular on the concepts of product liability and value chain liability. It shows that whereas the product liability framework has clearly been thought out to fit the linear value chain, central product liability concepts are also sufficiently flexible to be able to take in circularity considerations. The same goes for the concept of value chain liability. This article also shows how both types of liability become intertwined in the circular value chain.

Keywords: circular economy; product liability; recycling; value chains

1. Introduction

The creation of the circular economy is high on the agenda of the European Union (EU).¹ This transformation will require a move from linear to circular value chains. The existing value chain is linear, building on the idea that a product, after its manufacture, is transferred upwards in the supply chain to an “end user”, who uses the product and then disposes of it. The circular supply chain must be thought out in a radically different way.

In circular value chains, the product cannot end its life with an “end user”. It must be reused, refurbished or recycled (in the following, simply “recycled” will be used to cover all of these). This will lead to an increased focus on new business models that are based on the idea of collecting old products and transforming them into new products. The old products will need to be collected through “reversed value chains”, as part of circular supply chains, for recycling purposes.

However, these new practices will also produce new risks and possibly new liabilities. Thus, whereas waste may contain valuable secondary raw materials and generate positive economic impacts through its recycling, it can also have disastrous consequences for human health and the environment if not properly managed. Safety issues related to the circular economy have so far not received much attention, but as pointed out in a recent study, they may pose “significant barriers to [circular economy adoption]”.²

¹ See action plan: European Commission, “Circular economy action plan” (Europa.EU) <https://ec.europa.eu/environment/strategy/circular-economy-action-plan_da> (last accessed 20 May 2022).

² Z Chen, A Yildizbasi and J Sarkis, “How Safe Is the Circular Economy?” (2023) 188 Resources, Conservation & Recycling 106649.

In the EU, recent regulatory initiatives have been undertaken to support the green transition, including the move to a more circular economy.³ At the moment, the public law framework that specifically addresses recycling processes is found in the EU Waste Framework Directive (WFD).⁴ Member States must comply with this Directive. However, end-of-life products are also widely exported to countries outside of the EU and often dumped as waste. In fact, since 2006, when the Waste Shipment Regulation⁵ was adopted, exports of waste from the EU to third countries have considerably increased.⁶

Neither the WFD nor the Waste Shipment Regulation contains any liability provisions. This article asks whether tort law can support the goals of these frameworks and incentivise the adoption of circular business models and the building of circular supply chains. More concretely, it analyses which liability concepts are available for establishing tort liability for injury and other tortious claims for damages connected to recycling processes, thereby incentivising the design and manufacturing of products that meet the requirements of a circular value chain. The possible imposition of tort liability for insufficient circularity in the design of products may have spill-over effects in contract law and spark the use of contracts as a tool for ensuring product circularity. But whereas contract law issues from a circularity perspective have already to some extent been dealt with in legal literature,⁷ tort law has largely been left out. This article aims to fill part of that gap.

In doing so, this article focuses on the concepts of product liability and value chain liability as tools for the imposition of liability in recycling processes. It shows how both concepts may hold potential with regard to developing circular value chains, and also how the two liability concepts become intertwined in circular value chains. Before moving on to these issues, this article briefly places the topic in the context of waste law.

³ The initiatives include the EU Commission's Proposal for a Regulation of the European Parliament and of the Council establishing a framework for setting ecodesign requirements for sustainable products and repealing Directive 2009/125/EC, COM (2022) 142 final, see <https://environment.ec.europa.eu/system/files/2022-03/COM_2022_142_1_EN_ACT_part1_v6.pdf> (last accessed September 2022). Whereas the original eco-design directive from 2009 had a narrow focus on energy-related products, the new directive has a much broader scope. Amongst other things, it introduces the "digital product passport" that will make it easier to access information about the content of all products, including recyclability and the presence of substances of concern. New initiatives also include the Proposal for a Directive of the European Parliament and of the Council on Corporate Sustainability Due Diligence and amending Directive (EU) 2019/1937, COM/2022/71 final, see <https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF> (last accessed September 2022). The directive introduces environmental due diligence obligations on companies, sanctioned *inter alia* by liability (Art 2218).

⁴ Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste with subsequent amendments [2018] OJ L 150/109.

⁵ Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste.

⁶ See, eg, "Where the EU Exports Its Waste" <<https://www.statista.com/chart/24716/main-destinations-for-eu-waste/>> (last accessed 20 May 2022).

⁷ Consumer sales law is presently regulated in Directive (EU) 2019/771 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the sale of goods, amending Regulation (EU) 2017/2394 and Directive 2009/22/EC, and repealing Directive 1999/44/EC, see <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0771&from=en>> (last accessed September 2022). The directive introduces "durability" as a criterion to take into consideration when assessing the conformity of a product. For literature on contracts as a tool for achieving circularity goals, see, eg, K Kryla-Cudna, "Sales Contracts and the Circular Economy" (2020) 28(6) *European Review of Private Law* 1207–30; E Terryn and V Mak, "Circular Economy and Consumer Protection: The Consumer as a Citizen and the Limits of Empowerment through Consumer Law" (2020) 43 *Journal of Consumer Policy* 227–48; R Beheshti, "The Circular Economy and the Implied Terms of Contract in English Sales Law" (2021) 13(1) *Journal of Property, Planning and Environmental Law* 31–45. On the interaction between contract and tort with regard to sustainability requirements, see V Ulfbeck and O Hansen, "Interplay between Contract and Tort in the Supply Chain" in V Ulfbeck, A Andhov and K Mitkidis (eds), *Law and Responsible Supply Chain Management – Contract, Tort, Interplay and Overlap* (London, Routledge 2019) pp 133–45.

II. The EU waste law regime

In Europe, waste management is subject to a large and complex regulatory framework.⁸ The backbone in this is the WFD. In the Directive, “waste” is defined as a broad concept as “any substance or object which the holder discards or intends or is required to discard”.⁹ The WFD is based on the Polluter Pays Principle. With regard to the waste producer, this is reflected in Article 14(1), which states that “the costs of waste management, including the necessary infrastructure and its operation, shall be borne by the original waste producer or by the current or previous waste holders”.

It has been pointed out in the legal literature that there is an inherent tension between waste law and the circular economy. One basic problem is that waste law reflects a linear model. It operates a broad definition of waste in order to protect the environment. In contrast, the idea of the circular economy is to “do away with waste”.¹⁰ The broad definition of waste complicates reuse and other circularity models. Thus, once an item has been qualified as waste, a specific set of legal rules apply to it, and only under certain conditions can waste cease to be waste and re-enter an industrial process.¹¹

In order to focus not only on the management of waste but also on reducing the amount of waste in the first place, the concept of extended producer responsibility (EPR) was introduced in the beginning of the 1990s.¹² The idea was to create incentives for producers to take waste considerations into account in the design of products by making producers bear part of the costs associated with waste management. Thus, according to WFD Article 14(2), Member States may decide that the costs of waste management are to be borne partly or wholly by the producer of the product from which the waste came and that the distributors of such a product may share these costs.

In 2018, the WFD was updated with a new directive¹³ (the Amending Directive). There is an explicit goal of the Amending Directive to support the creation of the circular economy model.¹⁴ The primary tool for achieving this goal is a strengthening of the concept of EPR. Today, the relevant rules are found in WFD Articles 8 and 8a. The general principle is stated in Article 8(1) explaining that Member States may take measures to ensure that any natural or legal person who professionally develops, manufactures, processes, treats, sells or imports products (producer of the product) has EPR. According to Article 8(2):

[S]uch measures may encourage, inter alia, the development, production and marketing of products and components of products that are suitable for multiple use, that contain recycled materials, that are technically durable and easily repairable and that are, after having become waste, suitable for preparing for re-use and recycling in order to facilitate proper implementation of the waste hierarchy.

In other words, today, EPR is supposed to incentivise not only design for less waste but also circularity design, thereby avoiding waste altogether. However, as has been pointed out in the legal literature, EPR has not had strong effects on producers’ design efforts.¹⁵ It might be assumed that one of the reasons for this is that EPR is widely implemented as general

⁸ See, in general, eg, G van Calster, *EU Waste Law* (2nd edition, Oxford, Oxford University Press 2015).

⁹ WFD Art 3(1).

¹⁰ E Maitre-Ekern, “Rethinking Producer Responsibility for a Sustainable Circular Economy from Extended Producer Responsibility to Pre-Market Producer Responsibility” (2021) 286 *Journal of Cleaner Production* 1.

¹¹ *ibid.*, 5. In addition, consumer law may pose barriers to circularity. On this, see, in general, B Keirsbilck and E Terryn (eds), *Consumer Protection in a Circular Economy* (Cambridge, Intersentia 2019).

¹² Maitre-Ekern, *supra*, note 10, 4.

¹³ Directive (EU) 2018/851 of May 2018, amending Directive 2008/98/EC on waste.

¹⁴ Directive (EU) 2018/851, preamble, para 2.

¹⁵ Maitre-Ekern, *supra*, note 10, 6.

schemes under which producers pay collectively for waste management costs on a market share basis. This means that EPR rarely creates individual responsibility.¹⁶

In line with this, the WFD also does not contain any explicit rules on civil liability, neither with regard to the waste polluter, nor with regard to the product producer.¹⁷

On the other hand, the directive also does not rule out the application of existing liability rules to waste and recycling situations. This raises the question of whether known concepts of liability could be used for establishing “individual responsibility” and thereby incentivise circularity-friendly designs. After a brief introduction of the liability perspective on circularity more broadly, the concepts of product liability and value chain liability are examined for this purpose.

III. Tort liability as a tool

Products that are handed over for recycling processes may contain components or chemicals that need to be handled with special care. The process of dismantling may itself entail certain risks. The dismantling process must be safe so that no injuries or damages are caused when taking a product apart. Unsafe dismantling and recycling processes may not only cause personal injury, but also cause property injury or environmental damage. Thus, potential victims could be workers or volunteers involved in collection, waste and recycling management, owners of private property in the vicinity who are negatively affected by toxins or pollution and people experimenting with the dismantling of products and/or the use of products for new purposes. This reality constitutes a basis for bringing into play liability as a tool for creating incentives for the design of products that are circularity friendly.¹⁸

Here, a distinction should be made between the liability of the waste producer and the liability of the product producer.

The *waste producer* may be any enterprise that creates waste as a by-product of its activities. An early proposal for an EU regulation suggested imposing liability on the waste producer for damage caused by waste.¹⁹ However, the idea was given up, and instead the Environmental Liability Directive (ELD) focusing on operator liability was introduced.²⁰ Today, there are no specific EU rules dealing with the civil liability caused by waste.²¹ Instead, rules on this may be found in national law.

However, for the purpose of creating incentives for the production of circularity-friendly products, the focus must be on the possible liability of the producer that produces the product, which can later potentially be turned into waste (the *product producer*), and

¹⁶ *ibid.*

¹⁷ Choices of sanctions are basically left to Member States. Apart from that, sanctions primarily consist in reporting requirements, see WFD Arts 11(6) and 37. Art 38 contains a requirement to exchange information.

¹⁸ Thus, it is generally recognised that tort law, in addition to providing compensation to the injured party, also serves the purpose of preventing harm: see, eg, Principles of European Tort Law, Art 10:101; G Bruggemeier, *Common Principles of Tort Law, A Pre-Statement of Law* (London, British Institute of Comparative Law 2004) p 3.

¹⁹ Proposal for a Council Directive on Civil Liability for Damage caused by Waste, COM (89) Final – SYN 217, 15 September 1989.

²⁰ Directive 2004/35/CE of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage [2004] OJ L 143/56.

²¹ In one case, *Case C-188/07 Commune de Mesquer v. Total France SA and Total International Ltd* [2008] ECR I-4501, the European Court of Justice found that WFD Art 14 could be used as a basis for compelling a “waste holder” to pay compensation for damage caused to the environment by the waste it was holding (“waste liability”). In this case, an oil carrier that was responsible for an oil leak at sea was found to be a “waste holder” and therefore obliged to pay compensation on the basis of the WFD for the clean-up costs generated by the oil spill; see, eg, N de Sadeleer, “Liability for Oil Pollution Damage versus Liability for Waste Management: The Polluter Pays principle at the Rescue of the Victims” (2009) 34 *Journal of Environmental Law* 299.

other actors in the supply chain that might possibly have leverage over the product producer. This draws attention to product liability and value chain liability as possibly relevant liability frameworks.

IV. Product liability: the regional perspective

1. Introduction

The question of liability for damages or injuries caused in the recycling process can be analysed from a product liability angle. Thus, a product will typically pass from the producer down the chain, in the stream of commerce, to different buyers, and eventually it will be sold or handed over for “scrapping”²² or recycling. From a product liability perspective, the question is whether the original producer could be held liable for damage caused during the scrapping or recycling process if a more circularity-friendly design of the product could have avoided the injury. The question turns on the interpretation and understanding of several basic product liability concepts. So far, this question has hardly been dealt with in European product liability literature, and it has only been discussed in US case law. In the following, these US cases are used as a starting point for analysing EU law.

2. The concept of the product

In the EU, product liability is regulated by the Product Liability Directive (PLD).²³ It is a basic rule of the PLD that a manufacturer is strictly liable for damage caused by a defective product that it has put on the market (Article 1). According to Article 2, for the purpose of the Directive, “product” means “all movables even if incorporated into another movable or into an immovable ...”. Under the wording of this definition, an object may at the same time qualify as a product under the PLD and as waste under the WFD. For instance, if the owner of an object that is a movable under the PLD has decided to discard the object, it will qualify as waste under the WFD. However, it may well still be a product under the PLD. The question of the possible application of product liability rules to “waste” was discussed in the preparatory works to the Strasbourg Convention of product liability, predating the PLD. The discussion is summarized as follows at paragraph 25:

There was discussion on whether waste should be considered as a “product” and, accordingly, be subject to the provisions of the convention. The committee considered that if the producer were to use waste in some later manufacturing process or to supply it to another person for that purpose, the waste must be regarded as a product and therefore be subject to the system of liability provided for in the convention. If, however, the waste was discarded, thus becoming refuse, the convention would not apply.²⁴

²² Meaning that no further use can be made of the product and it is discarded.

²³ Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the member States concerning liability for defective products [1985] OJ L 210/29. The directive is currently under revision, see <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12979-Civil-liability-adapting-liability-rules-to-the-digital-age-and-artificial-intelligence_en> (last accessed September 2022).

²⁴ Explanatory Report to the European Convention on Products Liability in regard to Personal Injury and Death Strasbourg, 27.I.1977, para 25.

This approach seems to rule out that waste, which has been disposed of with no intention of reuse, can be considered a product under the PLD.²⁵ At the same time, it opens the possibility that “waste” can be a product if it has been handed over to a waste management company for the purpose of recycling.²⁶ From a circular economy perspective, this distinction arguably creates the wrong incentives. If product liability is potentially attached to products handed over for recycling but not to products handed over for disposal, the system will incentivise the production of waste rather than the building of circular business models. From a circularity perspective, no distinction should be made between the two categories. Arguably, today both should be regarded products under the PLD. But even if only waste that has been handed over for recycling is accepted as a “product” under the PLD, the question still arises as to whether, at some point in time, a product may cease to be the original product. For instance, this may happen after a dismantling process has been completed. If a car has been split into various different components and one of these components causes damage due to a defect, the original car producer cannot be held liable for this injury under product liability law since the injury has not been caused by the product that the manufacturer put on the market. This product has ceased to exist at the time of the injury. This was the situation in the US case *Johnson v. Murph*.²⁷ Here, employees at lead smelting companies were exposed to toxic fumes and particulates that were emitted during the process of smelting lead from dismantled automotive batteries. The injured parties sued the producer of the batteries, claiming compensation under product liability law. However, the court found that the plaintiffs had never come into contact with the defendant’s product, which was the intact battery. When the harm occurred, this product had ceased to exist. Consequently, the producer of the batteries could not be held liable under product liability law.²⁸

It must be assumed that the same would be the case under EU product liability law, where it is also a requirement that it is “the product” that has been put on the market that has caused the damage (cf. Article 6(1)c). However, components that form part of the finished product may in themselves also qualify as products under Article 2, meaning that it may also be possible for an injured party to claim compensation from the producer of the component if the component is still “intact” at the time of the injury and was defective at the time when it was put on the market.

In other situations, it may be more difficult to decide whether the product that was put on the market by the producer still exists or has been turned into something different (eg “waste”). Thus, during a dismantling process, the characteristics of a product will gradually change. In general, it is assumed that a producer cannot be held liable for damage caused by a product due to alterations of the product made by someone else after the product has left the sphere of control of the producer. This is a consequence of the general principle that in order for product liability rules to be triggered, the product must be defective at the time when it was put into circulation.²⁹ However, case law provides

²⁵ In parallel to this, see G Wagner, “§2 ProdHaftG” in *Münchener Kommentar zum BGB* 8 (Munich, C.H. Beck 2020; hereinafter *MüKo/Wagner*, §2 ProdHaftG), Rn. 31, where it is also pointed out that if waste is simply a by-product of a production process, then although it may qualify as a product under the PLD, the PLD will still not be applicable since it cannot be said that the product has been “put into circulation”.

²⁶ See also D Gesmann-Nuissl and C Wenzel, “Produzenten- und Produkthaftung infolge abfallrechtlicher Produktverantwortung” (2004) 57 *Neue Juristische Wochenschrift* 117.

²⁷ 562 F. Supp. 246 (N.D. Tex. 1983).

²⁸ It was further explained in the case that the fumes and dust that are damaging to humans only occur after the extraction of the lead from the destroyed battery and the subsequent introduction of that lead into the smelting process. CE Cantu, “The Recycling, Dismantling and Destruction of Goods as a Foreseeable Use under Section 402A of the Restatement (Second) of Torts” (1994) 46 *Alabama Law Review* 87.

²⁹ PLD Art 7(b). This raises the question of under which circumstances a new product can be said to have been created and who can be seen as the producer of this new product. For reflections on this in Austrian law, see B Koch, “Austria” in P Malinowski (ed.), *European Product Liability. An Analysis of the State of the Art in the Era of New Technologies* (London, Intersentia 2016) p 129. The question may be dealt with under the upcoming revision of the PLD.

examples of the imposition of liability if it is foreseeable for the producer that the product will be amended in a certain (dangerous) way.³⁰ On this basis, it might be possible to argue that a producer of a product that changes during a dismantling process could still be held liable for damage caused by the somewhat “changed” product. Obviously, it would be necessary to take into account the concrete circumstances, including the design of the product, instructions and warnings.

A basic question is whether a product can also “by itself” change from being a product and turn into something else simply because time passes and the product is subject to “wear and tear”. This question was addressed in the US case *High v. Westinghouse Electric Corp.*³¹ This case concerned electrical transformers containing polychlorinated biphenyl (PCB), with which human contact can be dangerous. The transformers had been handed over to a scrap metal salvage business, and an employee was exposed to the PCB and injured during the dismantling process. Although the injury in this case happened directly during the dismantling process, it was held that “Westinghouse did not assume liability for a transformer once its useful life was over and it had become a scrap item”.³²

Interestingly, the case assumes that – for the purpose of product liability – a product ceases to exist when its “useful life” has ended. At that point in time, it has been transformed into “scrap”. This may be before a claim would be barred by any statute of limitation.³³ In the US legal literature, the case has been interpreted to the effect that strict liability under Restatement (Second) of Torts does not apply in a dismantling process.³⁴ In the European product liability literature, there seems to be a different approach to this. Here, it is argued that a product does not cease to be a product for the purpose of the PLD just because it has reached its end of life and no longer has the necessary product characteristics.³⁵ Otherwise, it is argued, one would have to regard an object that has been handed over for disposal or recycling as a non-product, whereas the same object simply kept on stock would need to be regarded a product.³⁶ In addition, the “end-of-life theory” suggests some almost impossible decisions as to when a product can be said to have reached its end of life and must be qualified as waste.³⁷ It can also be observed that WFD Article 15(2) makes clear that the producer’s responsibility today does not necessarily end when the product is passed on to a waste manager.

3. The concept of the defect

If it is accepted that “end-of-life products” that have been handed over for recycling may still qualify as products under the PLD, a difficult question arises pertaining to the concept of the “defect” in the PLD. The question is whether and if so under what

³⁰ BGH NJW 1987, 1009, where a producer of a motorbike was held liable for damage caused by an attachment installed by another producer. The motorbike producer had specifically prepared the motorbike for this attachment. U Magnus, “Germany” in P Malinowski (ed.), *European Product Liability. An Analysis of the State of the Art in the Era of New Technologies* (London, Intersentia 2016) p 249.

³¹ 559 So. 2d 227 (Fla. Dist. Ct. app, 1989) 610 So.2d 1259 (Fla.1992) (“*Westinghouse*”).

³² The court also stated that “salvaging junk transformers was not a reasonably foreseeable use of the product”. In this way, the court made a double justification for its result.

³³ In some jurisdictions in the USA, this defence against a product liability claim has been formalised as the “useful life” defence. On this and the EU approach to this, see further below.

³⁴ DG Owen, JE Montgomery and MJ Davis, *Casenote Legal Briefs for Product Liability, Keyed to Owen, Montgomery and Davis* (Alphen aan den Rijn, Kluwer 2010) p 79.

³⁵ MüKo/Wagner, §2 ProdHaftG, Rn 32 on a product that has reached “*Ende seiner Lebensdauer*” (end of lifetime). Gesmann-Nuissl and Wenzel, supra, note 26, 118 on the “*notwendige Produkteigenschaft*” (necessary product characteristic).

³⁶ Gesmann-Nuissl and Wenzel, supra, note 26, 118.

³⁷ *ibid.*

circumstances such a product that might normally be regarded as “waste” can be defective.³⁸

According to Article 6 in the PLD, a product is defective when it does not provide the level of safety that a person is entitled to expect. In making the evaluation of what can reasonably be expected, several factors are to be taken into consideration, including “the use to which it could reasonably be expected that the product would be put”.³⁹

In the US case *Wingett v. Teledyne Industries*,⁴⁰ it has been held that a dismantling process could not be considered a “foreseeable use” of the product. In this case, the plaintiff was injured when he was trying to dismantle a ductwork, located twenty-five to thirty feet above the ground floor and supported by aluminium hangers attached to the ceiling. The collapse occurred because the particular segment where the plaintiff cut the two hangers was not supported by the standard iron collar that was used for all of the other segments. Despite the fact that the plaintiff had been using standard procedures for the dismantling, the court found that at the time of the injury the plaintiff was engaged in an unforeseeable use of the product. For this reason, there was no product liability. In contrast, the dissenting judge, explicitly assuming that there was a standard method in the trade for removing ductwork of the type in question, held that “[i]f this is so . . . then the designer and the constructor of [the ductwork] have a legal duty to factor the employment of that method of removal into its design and construction”.

The majority reasoning, finding that use of the product in the scrapping phase is unforeseeable use, has been followed in other US cases as well.⁴¹ Connected to the question of foreseeable use, in *Westinghouse*,⁴² the court also found that the injured plaintiff (an employee of a scrap metal salvage business) was not the “intended user”. Rather – and in line with linear value chain thinking – the intended user was the “ultimate consumer”.

Similar cases seem not to have been discussed in European product liability law. When assessing what a person is “entitled to expect” with regard to safety, it can be noted that the PLD does not specify that the person must be a consumer. A number of translations of the directive simply use the term “someone”.⁴³ Moreover, there is broad consensus that the concept of “the use to which it could reasonably be expected that the product would be put” is to be interpreted in such way that also non-typical usages must to some extent be included in the notion.⁴⁴ On this basis, it seems arguable that, with today’s focus on the creation of the circular economy, it is indeed foreseeable that at some stage a product will be dismantled for the purpose of recycling.⁴⁵ Put differently, it should be possible to regard it as a “legitimate expectation” that a product is designed in such way that at some point in time it can be safely dismantled and recycled.⁴⁶ This does not mean that the producer can

³⁸ Cf. Magnus, *supra*, note 30, 248: “according to a disputed view, the producer’s duties extend over the whole lifespan of the product and even cover the phase of its disposal, meaning that waste can also be ‘defective’”.

³⁹ PLD Art 6(1)b.

⁴⁰ 479 N.E.2d 52 (Ind. 1985).

⁴¹ See *Kalik v. Allis-Chalmers Corp.* 658 F. Supp.631 (W.D. Pa. 1987); *Boscarino v. Convenience Marine Products, Inc.* 817 F. Supp. 116 8 (S.D. Fla. 1993).

⁴² *Westinghouse*, *supra*, note 31.

⁴³ French: “on”; German: “man”; Italian: “che ci si puo”. Koch, *supra*, note 29, 124 finds that it is not generally possible to identify those whose expectations are relevant, but this must depend on the type of product and the range of people who might be exposed to its risks.

⁴⁴ Koch, *supra*, note 29, 125: “[w]hen it comes to the expected use of the product, Austrian courts are rather generous and also hold that misuse of a product still has to be accepted as long as it is not completely foolish under the circumstances”; Magnus, *supra*, note 30, 248; ALM Keirse, “Dutch Law” in P Malinowski (ed.), *European Product Liability. An Analysis of the State of the Art in the Era of New Technologies* (London, Intersentia 2016) p 319.

⁴⁵ MüKo/Wagner, §2 ProdHaftG, Rn. 33; Gessmann-Nuissl and Wenzel, *supra*, note 26, 120, both finding that reuse and recycling processes must be regarded as foreseeable uses.

⁴⁶ See, similarly, Cantu, *supra*, note 28, 100; D Fairgrieve and R Goldberg, *Products Liability* (3rd edition, Oxford, Oxford University Press 2020) p 308; Gessmann-Nuissl and Wenzel, *supra*, note 26, 120.

be held liable for any damage or injury caused in a recycling process.⁴⁷ It must be decisive whether the product in this phase presents risks that a person involved in the recycling process would not expect. This could, for example, be exposure to highly toxic pollutants during the handling of the product of which there was no warning.⁴⁸ Instructions accompanying the product would play a key role in making the defectiveness assessment. Claims from the producer that a product is “circular” might pave the way for this type of liability.

In addition, the separate question of the *legitimate expectations with regard to a product's lifetime* could still be raised. As mentioned above, in US law, the “useful life defence” has to some extent been codified in statutes that exclude claims based on product liability if the product's useful life has ended. The same line of reasoning has also been expressed in US case law. In *Winget* it was stated: “[w]e hold that a manufacturer's potential liability for products placed in the stream of commerce does not extend to the demolitions of the product”.

Notably, in this case, it is not the view that the product has ceased to exist as a product and has become something else. Rather, the thought behind the rule is that a manufacturer never has a duty to furnish goods that will not wear out.⁴⁹ This means that a manufacturer will not be held liable for injuries caused by a product that should no longer be in use and in fact should have been discarded.⁵⁰

The question is whether a similar argument could be made under EU product liability law. According to PLD Article 10, a product liability claim cannot be made until three years after the day on which the plaintiff became aware, or should reasonably have become aware, of the damage, the defect and the identity of the producer. According to the PLD preamble, part of the reason for this is that “products age over time”.⁵¹ The rule can be seen as a standard version of the “useful life defence”. However, there is no basis for assuming that this means there is no room for individual durability assessments under EU product liability when evaluating what a person is entitled to expect in terms of product safety. In the preparatory works to the PLD, it was specifically mentioned that a product cannot be considered defective only as a result of wear and tear of the product.⁵²

However, a new focus on circularity may fundamentally change the standards for what can reasonably be expected in terms of durability. The basic idea in circularity thinking is exactly to create goods “that will not wear out”.

4. The concept of “damage”

According to Article 9 in the PLD, by “damage” it is meant: (1) damage caused through death or personal injuries; and (2) damage to or destruction of any item of property other than the defective product itself, with a lower threshold of 500 European Currency Units. With regard to personal injury, it is a widespread assumption that PLD Art. 9a) covers any type of personal injury, despite the overall focus of the PLD

⁴⁷ MüKo/Wagner, §2 ProdHaftG, Rn 33.

⁴⁸ In line with this, Stapleton asks: “is a refrigerator defective because it carries no instructions in how to safely dispose of its CFC coolants after it is dumped?”, J Stapleton, *Product Liability* (Cambridge, Cambridge University Press 1994) p 314.

⁴⁹ Cantu, *supra*, note 28, 98 with reference to case law.

⁵⁰ *ibid*, 99. The useful life period of time begins to run when the product has been put on the market (and, unlike certain statutes of limitation, not from the time when a cause of action has accrued).

⁵¹ Para 11: “Whereas products age in the course of time . . .”.

⁵² Explanatory memorandum on the proposal for a Council Directive relating to the approximation of the laws, regulations and administrative provisions of the member States concerning liability for defective products, Bulletin of the European Communities Supplement 11/76, 16.

on consumer protection.⁵³ In contrast, with regard to property damage, it is a requirement that the item is of a type ordinarily intended for private use or consumption and was used by the owner mainly for their own private use or consumption. Personal injury may be caused in connection with recycling processes in various ways. If toxins are released during the recycling process in an uncontrolled way, people living in the vicinity and innocent passers-by may suffer health injuries. Similarly, during a dismantling process, volunteers and workers may suffer personal injury. Workers may also choose to sue the employer under contract law or specific work injury schemes in the relevant jurisdiction. In these cases, it will be the employer (or the insurer) who will have an interest in passing on the loss to the producer (cf. PLD Article 8).⁵⁴ In addition, damage to workers' or other victims' personal items, such as clothing, would be covered under Article 9b). In contrast, the concept of damage under the PLD does not cover property damage to items that are used for other purposes than private use. This means that damage to property in a recycling facility would not be covered by the directive. Similarly, only environmental damage to private property that reduces the economic value of the property might be covered by the PLD. For losses falling outside the concept of "damage" in the PLD, the injured party would have to base a product liability claim on ordinary tort law (cf. PLD Article 13, allowing for such claims). Thus, even though the PLD concept of damage may to some extent limit the applicability of the directive in recycling processes, ordinary tort law rule may fill this gap.

5. Summing up on product liability

Based on the above, it is easy to see that the existing product liability rules have been created with a view to the linear supply chain and that the introduction of the circular supply chain challenges basic product liability concepts. This goes both for the concept of a product and for the concept of "legitimate expectations" forming the core of the concept of the "defect". However, to a large extent, the concepts also appear to be sufficiently flexible to adapt to a circular reality, ensuring that the liability rules on personal injury and private property damage embedded in the product liability regime support and incentivise the design and production of circular products. In this regard, it is particularly essential that the concept of a product is interpreted to include both products that have been handed over for recycling purposes and products that have been handed over for disposal, thereby eliminating an incentive for disposal over reuse. Similarly, it is important that the concept of "legitimate expectations" is understood to include safety expectations in the recycling process.

V. Global value chains and tort liability: the global perspective

The question of the liability connected to recycling processes is relevant not only at the national and regional level, but also at the global level.

Thus, although regulatory efforts have been made to curb the export of waste, recent years have seen an increase in the amount of waste that has been transported from the

⁵³ See above under Section IV.3 on the concept of "the person" who is entitled to expect product safety. See further D Fairgrieve et al, "Product Liability Directive" in P Malinowski (ed.), *European Product Liability. An Analysis of the State of the Art in the Era of New Technologies* (London, Intersentia 2016) p 32, speaking about personal injury in general with regard to the concept of damage under Art 9 PLD; for Danish law, see V Ulfbeck, *Erstatningsretlige Grænseområder* (3rd edition, Copenhagen, DJOEF 2021) p 239.

⁵⁴ Dutch law expressly forbids recourse actions by insurance companies; Keirse, *supra*, note 44, 328. In contrast, in Danish law, the Workers' Compensation Act has recently been changed to allow for such recourse actions; see the Danish Workers' Compensation (Consolidated act no 314 of 10 March 2022 (Arbejdsskadesikringsloven)) § 77 (2).

Global North to the Global South. There are reports of disposal of clothes, releases of toxins into the desert in Chile⁵⁵ and e-waste such as batteries containing potentially dangerous chemicals being disposed of in West Africa and parts of Asia.⁵⁶

A proposal for a new EU regulation on waste shipment⁵⁷ has as one of its objectives to ensure that waste problems are not just exported to outside of the EU. Again, this regulatory framework can also be labelled a “public law” framework that is to be enforced via inspections (Article 57 of this proposed new EU regulation) and penalties (Article 60). This poses the question as to whether tort law can be used to support efforts into avoiding the dumping of waste that poses risks to health and the environment in third countries.

This section looks at the possible applicability of the concept of “global value chain liability” to these situations.

Following a number of such cases in Europe, this concept has been intensely discussed over recent years.⁵⁸ The focus has been on the possible liability of the so-called “lead company”, typically based in the Global North, for work injuries and environmental damage caused by the production practices of subsidiaries in the value chain in the Global South. In a number of cases concerning parental liability for the acts of a subsidiary, courts have been open to the idea that the parent company in the Global North could be held liable for injuries or damage caused by the production practices of a subsidiary.⁵⁹ Today, the general view seems to be that ordinary tort law principles govern this relation.⁶⁰ For instance, liability may rest on the amount of control exercised by the parent company, amounting to an “assumption of responsibility”.⁶¹ In legal theory, it has been argued that this line of thinking could be transferred to value chains organised by way of contracts and effectively controlled by major buyers, or so-called “lead firms”.⁶²

⁵⁵ See, eg, <<https://www.dailymail.co.uk/news/article-10450221/Dumped-Atacama-desert-mountain-discarded-cheap-clothes-West.html>> (last accessed 19 October 2022).

⁵⁶ “E-waste — a toxic waste stream where valuable finite resources are lost” <<https://tcocertified.com/e-waste/>> (last accessed 19 October 2022).

⁵⁷ Proposal for a Regulation on shipments of waste and amending Regulations (EU) No 1257/2013 and EU no 2020/1056, COM (2021) 709.

⁵⁸ See, eg, L Enneking, *Foreign Direct Liability and Beyond: Exploring the Role of Tort Law in Promoting International Corporate Social Responsibility and Accountability* (The Hague, Eleven International Publishing 2015) <<https://ssrn.com/abstract=2206836>> (last accessed 20 May 2022); P Rott and V Ulfbeck, “Supply Chain Liability of Multinational Corporations” (2015) 3 *European Review of Private Law* 415, 432; C Wittling, *Liability of Corporate Groups* (Cambridge, Cambridge University Press 2017) p 382 ff; V Ulfbeck, “Supply Chain Liability for Workers’ Injuries – Lessons to be Learned from Products Liability?” (2018) 8(3) *Journal of European Tort Law* 269; C Terwindt, S Leader, A Yilmaz-Vastardis and J Wright, “Supply Chain Liability: Pushing the Boundaries of the Common Law?” (2018) 8 *Journal of European Tort Law* 261; J Salminen, “From Product Liability to Producer Liability: Responding to the Deficit of Global Value Chains” (2019) 23(4) *Maastricht Journal of European and Comparative Law* 602; V Ulfbeck, A Andhov and K Mitkidis, *Law and Responsible Supply Chain Management. Contract, Tort, Interplay and Overlap* (London, Routledge 2019).

⁵⁹ Central cases have been *Doe v. Walmart* (2009) 572 F3d 677 (9th Cir.), *Chandler v. Cape* [2012] EWCA civ. 525, *Das v. George Weston*, 2018 ONCA 1053, *AAA v. Unilever plc* [2018] EWCA Civ 1532 (claim failed), *Okpabi and others (Appellants) v Royal Dutch Shell Plc and another (Respondents)* [2021] UKSC 3, *Lungwe v. Vedanta Resources* [2019] UKSC 20, [2019] 2 WLR 1051. Neither *Okpabi* nor *Vedanta* was decided on the merits but only concerned procedural matters. For a discussion of some of the cases, see *inter alia* L Roorda and D Leader, “Okpabi v Shell and Four Nigerian Farmers v Shell: Parent Company Liability Back in Court” (2021) 6 *Business and Human Rights Journal* 368–76.

⁶⁰ This was made particularly clear in the English case, *Vedanta*, supra note 59.

⁶¹ *ibid*; *Unilever*, supra, note 59.

⁶² Rott and Ulfbeck, supra, note 58, 432; Terwindt et al, supra, note 58, 261. The Canadian case, *Das v. George Weston*, supra, note 59, seems to accept the argument. Most recently, a proposal for a new directive on corporate sustainability due diligence has been introduced, see Proposal for a Directive of the European Parliament and of the Council on Corporate Sustainability Due Diligence and amending Directive (EU) 2019/1937, COM/2022/71 final, see <https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF> (last accessed September 2022). The directive introduces due diligence obligations

From a circular economy perspective, the question is whether a similar type of liability could ensue in a “reversed supply chain” where the company in the Global North acts not as a buyer, but as a seller of a product for recycling or demolition in the Global South.

In a recent UK case, this question was provisionally⁶³ answered in the affirmative. Thus, *Hamida Begum v. Maran (UK) Limited*⁶⁴ concerned the possible liability connected to the selling of a ship for scrapping and a workplace injury at the shipyard that had bought the ship for demolition. Maran, a UK domiciled shipbroker, acted as agent for the shipowner, Centaurus Special Maritime Enterprise (CSME). Maran sold the ship to Hsejar Maritime, Inc. (Hsejar), a so-called “demolition buyer”, who then sold the ship to a shipyard in Chittagong. At the Chittagong shipyard, an employee fell to his death while working on the demolition of the ship. His widow sued Maran for damages, arguing that the shipbroker should be held liable on the basis of the tort of negligence.

Interestingly, whereas the global value chain liability cases so far have focused strongly on the idea of “assumption of responsibility” through control, in *Begum*⁶⁵ the focus is primarily on concepts that could be described as “known danger” and “the creation of a danger”.

As the first “route” to liability, the respondents argued that the appellant owed the deceased a common law duty of care, based on the classical case *Donoghue v. Stevenson*,⁶⁶ in which a producer of a bottle of ginger beer was held liable towards the consumer who had fallen ill after drinking the beer as it turned out that the bottle contained a decomposed snail. The case established the tort of negligence in English law and the principle that a duty of care is owed to one’s “neighbour”.⁶⁷ The case has also been seen as a founding product liability law case.⁶⁸ In *Begum*,⁶⁹ the court was critical of the idea of regarding the damage as caused by a product (the vessel) known by the respondents to be dangerous. Rather, in the view of the court in *Begum*,⁷⁰ the danger was caused by the owner of the shipyard failing to implement safe working conditions at the workplace, not the vessel itself. However, according to the court, the view of the respondent was not “so fanciful that it should be struck out”.⁷¹

As the second “route” to liability, the respondents argued that, although it is accepted that A (here the shipbroker/seller) will not be liable for harm done to C caused by a third party B (intervention of third parties (here the shipyard)), the exception to this rule arises where A is responsible for or has created the danger that B has then exploited and that has

of companies, sanctioned *inter alia* by liability (Art 22) and includes in its Annex the Basel Convention (Part II no. 10). If adopted, the directive will push companies to take control of their supply chains. At the same time, the directive also provides for “safe harbour” protection for companies that live up to their obligations.

⁶³ The case concerned the procedural question as to whether the appellant was entitled to “summary judgement” on the basis that there were “no reasonable grounds” for bringing the claim or that the respondent had “no real prospect of succeeding” with the claim. This means that the case was not decided on the merits, but at the same time the court in reality got close to dealing with the subject matter of the case.

⁶⁴ [2021] EWCA Civ. 326 (“*Begum*”).

⁶⁵ *ibid.*

⁶⁶ *Donoghue v Stevenson* [1932] UKHL 100.

⁶⁷ The principle is that one must take reasonable care to avoid acts or omissions that could reasonably be foreseen as likely to injure one’s neighbour. A neighbour was identified as someone who was so closely and directly affected by the act that one ought to have them in contemplation as being so affected when directing one’s mind to the acts or omissions in question. See, eg, RA Percy and CT Walton, *Charlesworth & Percy on Negligence* (9th edition, London, Sweet and Maxwell 1997) p 26.

⁶⁸ See, eg, S Whittaker (ed.), *The Development of Product Liability* (Cambridge, Cambridge University Press 2010) p 52.

⁶⁹ *Begum*, supra, note 64.

⁷⁰ *ibid.*

⁷¹ Para 50.

caused harm to C.⁷² The court found that it was “arguable and not fanciful” to allege that the appellant had created a danger by sending the vessel to Bangladesh and knowingly exposed the workers to significant dangers.

In *Begum*,⁷³ the court was disinclined to attach liability directly to the product (“route one”), but it found that the workplace conditions (“route two”) were the main problem. This corresponds with the traditional approach in the previously decided cases concerning the global value chain liability of the Global North buyer, where there has also been a focus on workplace conditions and the element of control within the supply chain.⁷⁴

However, the focus in *Begum* on the elements of “known danger” and “dangerous product” in “route one” reflects the fact that the value chain is reversed in the sense that the company in the Global North is the seller, not the buyer of goods. This means that a product moves from the seller in the Global North to the buyer in the Global South. This opens the possibility of focusing not just on poor working conditions, but also on the product itself in the liability assessment.

Thus, although the court in *Begum* favoured a “route two” approach in the concrete situation, *Begum* does not rule out the imposition of *Donoghue v. Stevenson* liability in a situation where the injury can be ascribed to the product and the fact that it has not been designed in a recycling-friendly manner. As explained in *Begum*, such liability could be fault-based liability and attach to the shipbroker and/or the seller of the product. While *Begum* is not a case that has yet been decided on its merits, its line of reasoning displays basic tort law reasoning. It could arguably be transferred to other types of products than ships that are also exported for recycling or scrapping when they reach their end-of-life stage. For example, following the turn away from fossil fuels, decommissioning in the offshore industry may lead to parallel practices with regard to offshore modules.⁷⁵ As to smaller products, the garment industry might constitute an example. Here, companies export used garments to the Global South and to Eastern Europe that are of such poor quality that they cannot be recycled but end up being used as landfill in ways that may cause damage not only to the environment, but also to human health. In such situations, the line of reasoning in *Begum* could be used to build an argument for the tort liability of the seller for selling products known to them to be dangerous in the place to which they are exported due to their lack of recyclability. At the more general level, *Begum* may be seen as a frontrunner in suggesting tort liability for this kind of activity that is partly dealt with in the proposal for the Directive on Corporate Sustainability Due Diligence, which imposes tort liability for breach of the waste shipment regime of the Basel Convention.⁷⁶

⁷² Para 51.

⁷³ *Begum*, supra, note 64.

⁷⁴ Also in *Begum* (*ibid*), an element of control creeps in when assessing whether Maran could in reality have acted differently. Thus, CMSE had entered into a contract (a memorandum of understanding) with Hsejar that Hsejar would only sell the vessel to a shipbreaker’s yard “that is competent and will perform the demolition and recycling of the vessel in an environmentally sound manner and in accordance with good health and safety working practices”. The court found it relevant for the liability assessment that Maran, when negotiating this contract, could have linked the inter-party payments to the delivery of the vessel to an approved (safer) shipyard. For a full analysis of the case in a global value chain context, see C Glinski, “Liability of Shipowners and Classification Societies for Environmental Damage and Unsafe Working Conditions at Recycling Yards” (2022) Review of European, Comparative & International Environmental Law doi: 10.1111/reel.12455.

⁷⁵ On this prospect, see, eg, <<https://geographical.co.uk/science-environment/cost-scrapping-worlds-ageing-oil-and-gas-rigs>> (last accessed September 2022).

⁷⁶ Proposal for a Directive of the European Parliament and of the Council on Corporate Sustainability Due Diligence and amending Directive (EU) 2019/1937, COM/2022/71 final, see <https://eur-lex.europa.eu/resource.html?uri=cellar:bc4dcea4-9584-11ec-b4e4-01aa75ed71a1.0001.02/DOC_1&format=PDF> (last accessed September 2022). The directive introduces due diligence obligations of companies, sanctioned *inter alia* by liability (Art 22), and it includes in its Annex the Basel Convention (Part II no. 10).

VI. Where value chain liability and product liability meet

If the analyses in Section V are accepted and it is assumed that someone who sells a product for recycling purposes (eg to the Global South or Eastern Europe) could be subject to fault-based tort liability if the product causes damage due to poor recyclability design, such liability may hit the producer of the product through recourse actions. In this way, seller liability can also incentivise the production of circularity-friendly products.

In some situations, the seller of the product for recycling could even be subject to strict product liability. This would be the case if the seller of the product for recycling is the same (legal) person who has previously imported the product into the EU.

Thus, according to PLD Article 3(2), not only the producer but also the importer of the product into the EU may be held liable under the product liability rules (the importer liability rule). Situations in which the seller for recycling might previously have imported the product into the EU could occur, for instance, in the shipping industry and probably also in the garment industry.

Whereas choice of law rules may pose barriers to the application of the importer liability rule if the injury has happened outside of the EU, the importer liability rule would be applicable if the injury happens somewhere in the EU.⁷⁷ In these cases, product liability may supplement value chain liability and incentivise the “lead firm” in the role of the importer to focus not only on the work environment conditions in the supply chain, but also on the product itself and its circularity-friendly design to make it safe to use in a future recycling process.

The above reflections illustrate how value chain liability and product liability can “meet” in the circular value chain.

VII. Conclusion

While the creation of the circular economy is high on the agenda in the EU, the tools for reaching the goal of incentivising the circularity-friendly design of products have so far primarily been of a public law nature. In particular, the concept of EPR has been developed but has only been partly successful. The approach overlooks the potential for using tort law to create incentives for the design of circularity-friendly products. In this regard, both concepts of value chain liability and product liability should be explored.

With regard to product liability, there are clear challenges in applying the existing product liability regime to situations where injury is caused in dismantling or other reuse processes. However, the inherent flexibility in central product liability concepts such as “product” and “legitimate expectations” also provides opportunities for developing product liability law to fit circular value chains. To achieve this goal, the concept of a “product” should be interpreted to include objects that have been handed over for dismantling or reuse processes, and the concept of “the safety one can legitimately expect” should be interpreted to include the legitimate safety expectations in a reuse and dismantling process.

With regard to global value chain liability, discussions have so far primarily concerned “production liability” (ie the possible liability of the lead firm for the supplier’s workplace organisation) and liability for pollution stemming from the production activities of the supplier. In contrast, cases in this area do not directly target the possible obligations

⁷⁷ In *Begum*, supra, note 64, it was explored at length whether Art 7(2) in Rome II (REGULATION (EC) No 864/2007 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 July 2007 on the law applicable to non-contractual obligations) <<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32007R0864&from=en>> (last accessed September 2022) could provide a basis for a choice of English law even though the injury occurred in Bangladesh.

of the lead firm to ensure that the product itself is designed in a “circularity-friendly” manner. An incentive to develop this focus can be found in the possible liability of the lead firm in the role of the seller of the product for recycling purposes when the product has reached its end of life. Such a liability standard was tentatively described in *Begum* revolving around fault-based value chain liability.

Fault-based liability of the seller for the insufficiently circular design of a product sold for recycling can hit the producer through recourse actions and as such incentivise the circularity-friendly design of products. In this way, value chain liability and product liability meet.

In some situations, they may even merge. Thus, if the seller of the product for recycling is also the person who has previously imported the product into the EU, the seller may become strictly liable under the importer liability rule in the PLD if the product causes damage in the recycling process due to an insufficiently circular design.

Whereas choice of law rules may pose obstacles to the application of EU product liability rules on importer liability if the injury happens outside of the EU, product liability rules on importer liability may supplement value chain liability rules if the injury happens within the EU.

In this way, both product liability and global chain liability and the interaction between these two liability regimes could potentially become drivers for the development of circular supply chains.

Disclaimer. This article is a contribution to the CEPRI project on Circular Supply Chains – identifying and allocating legal risks (CirCus), <https://jura.ku.dk/privategovernance/english/research/circular-supply-chains/>.