LEGAL ANALYSIS OF CONSUMER RIGHTS TO PRODUCT REPAIR UNDER THE EU DIRECTIVE ON REDUCING, REUSING AND REPAIRING

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Abstract
This paper provides a comprehensive legal analysis of the time limits governing consumers' rights to claim and request product repairs. It focuses on the new EU Directive promoting product lifecycle extension through reducing, reusing, and repairing. The Directive mandates that manufacturers and sellers enable product repairs up to ten years from the date of manufacture, marking a significant advance towards sustainable consumption and enhanced consumer protection, but only for certain kinds of goods.

Scientific contribution lies in the author's critical examination of the intersection between the newly introduced obligations under the Directive and existing consumer rights under warranties and guarantees. By analysing potential overlaps and conflicts, the paper sheds light on the legal implications and challenges of harmonising these rights within current legal frameworks in selected member states.

The critical legal questions to be addressed will include alignment with existing laws and determining how the directive's mandate for repair for up to ten years aligns with existing national laws on warranties and guarantees. Additionally, stakeholders' responsibilities will be examined in relation to the analysis of the legal obligations of manufacturers and sellers under the Directive, as well as their interactions with consumers' rights to claim defects. In conclusion, the implementation challenges will be addressed to ensure the effective implementation of the Directive into national legislation.

By addressing these questions, the paper aims to provide actionable recommendations to facilitate the effective implementation of the Directive. The findings contribute to the broader discourse on consumer law reform, environmental sustainability, and the integration of circular economy principles into legal systems.

Keywords*: Consumer rights, R2R Directive, guarantee, sustainability, legal analysis.*

1. Introduction

The intensifying global awareness of environmental degradation and the imperative for sustainability have spurred unprecedented legislative action worldwide. The European Union is at the forefront of enacting comprehensive policies to mitigate the adverse consequences of unsustainable production and consumption patterns(Luzak, 2020).

The European Union has been progressively advancing a comprehensive framework to foster a circular economy, with a significant emphasis on enhancing product durability, repairability, and reusability (Boniface et al., 2024). This commitment is reflected in various policy initiatives and legislative measures designed to encourage sustainable production and consumption patterns across member states (Camilleri, 2020). The ambitious goals of the circular economy include minimizing waste, reducing material demand, and promoting the efficient use of resources throughout the product lifecycle (Mikula et al., 2020). Among the

key instruments driving this transition is the EU Directive on Reducing, Reusing, and Repairing (Directive (EU) 2024/1799 of the European Parliament and of the Council of 13 June 2024 on common rules promoting the repair of goods and amending Regulation (EU) 2017/2394 and Directives (EU) 2019/771 and (EU) 2020/1828; further in text: Directive on Reducing, Reusing and Reparing or Right to Repair Directive (R2R Directive) which seeks to empower consumers with enhanced rights related to product repair, thereby promoting a culture of repair over replacement and contributing to a more sustainable and resource-efficient economy (Hernández et al., 2020). This directive is strategically designed to tackle premature obsolescence and encourage manufacturers to create more durable, repairable, and easily disassembled products. By establishing a legal framework that supports and protects consumer rights to repair, the EU aims to incentivize manufacturers to prioritize product longevity and facilitate access to repair services and spare parts (Hernández et al., 2020). The directive's provisions aim to create a level playing field, ensuring that consumers are not unduly pressured into purchasing new products when their existing ones can be repaired, thereby extending product lifecycles and reducing environmental impact.

The R2R Directive represents a pivotal step towards a more sustainable and circular economy within the European Union, addressing critical aspects of product design, consumer rights, and waste reduction (Pangburn & Stavrulaki, 2022). It aims to establish a robust legal framework that empowers consumers to opt for repair over replacement, thereby extending the lifespan of products and reducing environmental impact.

This paper examines the EU legal framework on promoting repair as a pivotal step towards sustainable consumption and waste reduction within the European Union. A central problem it addresses is the prevailing "throwaway culture," which is incentivized by manufacturers designing products for obsolescence rather than durability and repairability. This problem will be tackled through a detailed legal analysis based on the European consumer protection legal framework.

This research explores the scope of consumer rights, the obligations imposed on manufacturers and sellers, and the mechanisms for enforcement, including the role of Member States with varying consumer protection standards. The Directive's legal, economic and environmental impacts will be analysed, considering its potential effects on businesses, consumers, and the environment. Furthermore, by examining the Directive's interaction with existing EU legislation, such as the Eco-design Directive, this article aims to provide a comprehensive understanding of its potential and challenges in promoting a more sustainable and circular economy (Boniface et al., 2024).

2. Objectives of the EU Directive on Reducing, Reusing and Repairing

The Directive on Reducing, Reusing, and Repairing addresses the unsustainable consumption patterns that have become a hallmark of modern economies. The core objective is to create a harmonised set of rules across member states that promote the repairability of goods, ensuring that consumers have access to the necessary information, spare parts, and repair services. Furthermore, it aims to incentivise manufacturers to design more durable, easily repairable products that are less prone to premature obsolescence, fostering a culture of sustainability and resource efficiency.

By establishing a legal framework that supports and protects consumer rights to repair, the EU aims to incentivise manufacturers to prioritise product longevity and facilitate access to repair services and spare parts (Hernández et al., 2020). This approach aims to promote sustainable consumption and minimise waste.

The directive acknowledges the significant role that consumer behaviour plays in the transition to a circular economy, recognising that informed purchasing decisions and a

willingness to repair products can drive demand for more sustainable goods and services. Ultimately, the EU Directive on Reducing, Reusing, and Repairing represents a multifaceted approach to promoting sustainable consumption and production patterns, aiming to create a more resilient and environmentally responsible economy that aligns with the principles of a circular economy. This Directive strengthens provisions related to the repair of goods, contributing to the proper functioning of the European Union's internal market and providing a high level of consumer and environmental protection(Directive, 2024). The directive's provisions aim to create a level playing field, ensuring that consumers are not unduly pressured into purchasing new products when their existing ones can be repaired. Thus, the directive extends product lifecycles and reduces environmental impact.

The genesis of the EU Directive on Reducing, Reusing, and Repairing lies in the European Union's broader commitment to transitioning towards a circular economy, a model that emphasises resource efficiency, waste reduction, and sustainable consumption(Weale et al., 2002). Recognising the limitations of the traditional linear "take-make-dispose" economic model, the EU has prioritised the development of policies and regulations that promote the reuse, repair, and recycling of products and materials (Chiaraluce et al., 2021). The Directive emerged as a direct response to growing concerns about premature obsolescence, the environmental impact of discarded products, and the need to empower consumers with greater control over the lifespan of their goods. It also aligns with the design for disassembly, remanufacturing, and recycling (Hernández et al., 2020). Academic research has highlighted the critical role of consumer behaviour in driving the transition to a circular economy, noting that consumers can either support or hinder this transition through their purchasing decisions(Jones & Comfort, 2021).

The primary objective of the Directive is to establish a comprehensive legal framework that promotes the repairability and longevity of products, thereby reducing waste and conserving resources. This involves a multi-pronged approach that includes enhancing consumer rights, incentivising manufacturers to design more durable and repairable products, and facilitating access to repair services and spare parts. By empowering consumers to choose repair over replacement, the Directive aims to extend the lifespan of products, reduce the demand for new goods, and minimise the environmental footprint associated with manufacturing and disposal. The absence of incentives to design products and buildings for disassembly and reuse at the end of their life is a significant challenge (Adams et al., 2017).

The Directive aims to address several key challenges that hinder the widespread adoption of repair practices (Mak & Lujinovic, 2019). One such challenge is the limited access to repair information and spare parts, which often makes it difficult or impossible for consumers to repair their products. Another challenge is the perceived high cost of repair compared to the cost of replacing a product, which can discourage consumers from choosing repair even when it is technically feasible(Sevcenko et al., 2019). The directive is designed to encourage a circular consumption pattern (Rahla et al., 2021). It aims to promote the development of a robust repair sector, creating new economic opportunities and supporting the growth of local repair businesses.

3. Core Provisions and Consumer Rights under the R2R Directive

The EU Directive on Reducing, Reusing, and Repairing introduces a range of provisions aimed at enhancing consumer rights and promoting the repairability of products. One of the most significant aspects of the Directive is the establishment of a "right to repair," which grants consumers the legal entitlement to have their products repaired by manufacturers or authorised repairers.

This right extends to a wide range of goods, including electronics, household appliances, and other consumer products, ensuring that consumers are not unduly pressured into purchasing new items when their existing ones can be repaired. The Directive requires manufacturers to provide access to repair information, diagnostic tools, and spare parts to both consumers and independent repairers, thereby facilitating the exercise of the right to repair (Jin et al., 2022).

This right extends beyond the warranty period, ensuring that consumers can access repair services throughout the reasonable lifespan of a product. The Directive requires manufacturers to provide consumers with clear and comprehensive information about the repairability of their products, including details on the availability of spare parts, repair manuals, and diagnostic tools. This information must be easily accessible and user-friendly, enabling consumers to make informed decisions about whether to repair or replace their products. Furthermore, the Directive requires manufacturers to design products that facilitate repair, using standardised components and avoiding the use of proprietary tools or techniques that could restrict access to repair.

The right to repair is a significant development that allows individuals to reclaim and tinker with old technologies (Hatta, 2020). To further incentivise repair, the Directive encourages member states to implement measures that reduce the cost of repair services, such as tax breaks, subsidies, or the establishment of repair vouchers. These measures aim to repair a more economically attractive option for consumers, encouraging them to choose repair over replacement. Additionally, the Directive encourages the development of repair networks and community repair initiatives, enabling consumers to access affordable and convenient repair services.

The Directive also addresses the issue of planned obsolescence, the practice of designing products with a limited lifespan to encourage repeat purchases. While explicitly prohibiting planned obsolescence is challenging due to difficulties in proving intent, the Directive takes steps to combat this practice by requiring manufacturers to ensure that spare parts are available for a reasonable period after a product is discontinued. This provision aims to prevent manufacturers from deliberately shortening the lifespan of products by limiting access to spare parts. The Directive introduces several key consumer rights related to product repair and maintenance.

First, consumers can request repair services from manufacturers or authorised repairers, regardless of whether the product is still under warranty. Second, consumers have the right to receive clear and transparent information about the cost of repair services before agreeing to proceed with the repair. The provisions of the directive are designed to keep repair costs minimal, making it a viable option for consumers. Third, consumers are entitled to a warranty extension for repaired products, ensuring that the repair is carried out to a satisfactory standard and that any subsequent defects are covered. Fourth, consumers can seek redress if a repair is not carried out correctly or if the product fails again after the repair.

These consumer rights are designed to empower consumers and provide them with the confidence to choose repair over replacement, contributing to a more sustainable and circular economy. The lack of consumer awareness regarding product care has also been identified as a reason why consumers either do or do not take care of their products (Ackermann, 2018).

4. Analysis of the Legal Framework and Scope of the Directive

The EU Directive on Reducing, Reusing, and Repairing is a complex legal instrument with a broad scope that encompasses various aspects of product design, manufacturing, and consumer rights. To fully understand its implications, it is essential to analyse the legal framework underpinning the Directive and clarify its scope of application.

The EU Directive places significant obligations on manufacturers to ensure the repairability and longevity of their products. Before the introduction of this Directive, consumer repair rights within the EU were mainly governed by Directive (EU) 2019/771 on the sale of goods. This directive provides for a minimum two-year legal guarantee period during which consumers can seek remedies, including repair, for defective goods. Nonetheless, implementation of these rights has varied across Member States, often resulting in disparate levels of consumer protection.

The Directive mandates that manufacturers design products with repairability in mind, using standardised components, avoiding proprietary tools, and providing clear disassembly instructions. The product should be designed to facilitate a seamless repair process. Furthermore, manufacturers must make spare parts, repair manuals, and diagnostic tools available to consumers and independent repairers for a reasonable period after discontinuing a product. Legal guarantees under Directive 2019/771 are supplemented by commercial guarantees voluntarily offered by sellers or manufacturers. These guarantees differ in duration, scope, and conditions and often do not align with the more extended repair obligation now mandated under the new Directive.

The new Directive extends beyond the scope of Directive 2019/771 by ensuring repairability throughout the product's lifespan, not just during the initial guarantee period. This is a significant shift towards promoting sustainable consumption patterns. The Directive also introduces the concept of "extended producer responsibility", requiring manufacturers to take greater responsibility for the end-of-life management of their products. (Weale et al., 2002) This includes incentivizing repair and reuse as well as ensuring the proper collection and recycling of products that cannot be repaired. The Directive aims to shift the focus from a linear "take-make-dispose" model to a circular economy model, where products are designed to last longer, be easily repaired, and ultimately recycled (Chen, 2019). Furthermore, the new Directive aims to overcome barriers to repair, such as limited access to spare parts and repair information, by requiring manufacturers to provide this information to consumers and independent repairers.

5. Interaction with the existing Consumer Rights

This Directive does not exist in a vacuum; it interacts with a well-established body of consumer rights legislation at both the EU and Member State levels. Understanding this interaction is crucial for effective implementation and to avoid unintended consequences.

As mentioned above, the Directive complements the existing EU directives, such as the Eco-design Directive and the Consumer Rights Directive. While the Eco-design Directive focuses on setting minimum standards for product durability and energy efficiency, this new Directive tackles the barriers to repair, ensuring that consumers can exercise their right to extend the lifespan of their products. It also reinforces aspects of the Consumer Rights Directive by clarifying the remedies available when goods are faulty and emphasising the importance of providing clear and accessible information to consumers (European Commission, 2023). Consumer protection law ensures the defence of the collective interests of consumers in the internal market(Chaudhary, 2005). Member States are free to adopt measures that offer a higher level of consumer protection, as long as this is compatible with Union law (Weale et al., 2002).

The interplay between EU directives and national laws is equally important. Member States often have their specific regulations regarding consumer protection, product liability, and waste management. These national laws may impose additional or more stringent requirements than those outlined in EU directives. When implementing the new Directive, Member States must ensure that their national laws are aligned with the Directive's objectives

while preserving any existing national provisions that offer a higher level of consumer protection.

Regarding the relationship with national consumer protection laws, Member States have varying levels of consumer protection agencies and legal frameworks. Some, like Germany, France, and the Netherlands, boast strong consumer protection traditions, well-established consumer organisations, and proactive enforcement agencies (Cuijpers, 2009; Giliker, 2016).

Others, particularly in Southern and Eastern Europe, may have weaker systems due to limited resources or a less developed tradition of consumer activism. The Directive should be implemented to respect these existing national frameworks while ensuring a minimum level of consumer protection across the EU(Chaudhary, 2005).

The Directive introduces the concept of "extended producer responsibility," which requires manufacturers to assume greater responsibility for the end-of-life management of their products. However, the specific details of these schemes are left to the discretion of each Member State, which may lead to inconsistencies in the application of the Directive and potentially undermine its effectiveness (Kanamugire & Chimuka, 2014). Clear guidelines from the Commission are needed to ensure a level playing field and prevent regulatory arbitrage.

Careful attention must be paid to potential conflicts with existing EU legislation, such as the Eco-design Directive. While both directives aim to promote sustainable products, their specific requirements may overlap or contradict each other. For example, stricter energy efficiency standards under the Eco-design Directive might inadvertently make products more difficult to repair. Policymakers need to ensure that the two directives are implemented in a coherent and mutually supportive manner (Giliker, 2016).

6. Legal Challenges and Implementation Issues

Prior to the introduction of the EU Directive, consumer repair rights within the EU were largely governed by Directive 2019/771 on the sale of goods. This directive provides a minimum two-year legal guarantee period during which consumers can seek remedies, including repair, for defective goods.

However, implementing these rights has varied across Member States, often resulting in disparate consumer protection. The new Directive strengthens consumer rights related to repair by working in conjunction with existing consumer protection laws, such as the Sale of Goods Directive (2019/771). While the Sale of Goods Directive provides a minimum two-year legal guarantee period during which consumers can seek remedies, including repair or replacement, for defective goods, the new Directive extends beyond this period by promoting repairability throughout the product's lifespan.

The new EU Directive interacts with existing consumer rights frameworks, particularly those established by Directive 2019/771, by expanding the scope and duration of repair rights. It supplements the existing two-year guarantee period by ensuring that manufacturers make spare parts and repair information available for a longer period, even after the guarantee has expired.

The implementation of the EU Directive faces several legal challenges and potential implementation issues. One key challenge is ensuring effective enforcement of the Directive's provisions across all Member States(Errington & Childe, 2013). Variations in national legal systems and enforcement mechanisms could lead to inconsistencies in applying the Directive, potentially undermining its effectiveness. Furthermore, the Directive's success depends on active consumer awareness and engagement. Many consumers may be unaware of their new repair rights or face practical barriers to accessing repair services. Overcoming these

challenges requires a multi-faceted approach, including robust enforcement mechanisms, consumer education campaigns, and support for independent repair networks.

Another challenge lies in balancing the interests of consumers, manufacturers, and repair service providers. The Directive aims to incentivize manufacturers to design more repairable products, which may require significant investments in product design and manufacturing processes. Some manufacturers may resist these changes, arguing that they could stifle innovation or increase production costs. The Directive requires Member States to establish effective monitoring and enforcing compliance systems, including imposing penalties for non-compliance. However, each Member State is left to determine the specific details of these enforcement mechanisms.

To ensure consistent and effective enforcement across the EU, the Commission should develop guidelines for Member States on best practices for monitoring compliance. Moreover, standardisation of repair procedures is crucial. Standardised diagnostic tools and repair manuals would facilitate the repair process, enabling independent repairers to compete effectively with authorised service centres.

The complexity of modern products, particularly electronic devices, poses a significant challenge to repairability. Many products are designed with proprietary components or software that can only be accessed by authorised repairers (Lefebvre et al., 2018). This creates a barrier to independent repair and limits consumer choice.

The EU Directive should encourage manufacturers to adopt open standards and provide independent repairers with access to necessary repair information and tools. This could lead to a fragmented enforcement landscape where the level of protection afforded to consumers varies depending on their location within the EU. Another legal challenge relates to interpreting and applying key concepts within the Directive, such as "reasonable cost" for repairs and "reasonable period" for the availability of spare parts. These concepts are inherently subjective and open to interpretation, which could lead to disputes between consumers, manufacturers, and repairers. To address this issue, the Commission should issue clear guidelines on the interpretation of these concepts, providing concrete examples and benchmarks to ensure consistent application across Member States.

The Directive introduces the concept of "extended producer responsibility", and this requires manufacturers to take greater responsibility for the end-of-life management of their products (Hörnle et al., 2018). However, the specific details of these schemes are left to the discretion of each Member State, which could lead to inconsistencies in the application of the Directive and potentially undermine its effectiveness.

The potential for conflicts with other EU legislation, such as the Eco-design Directive (2009/125/EC), requires careful attention because this directive establishes minimum energy efficiency standards for a wide range of products (Stevels & Smit, 2019). The Eco-design Directive aims to reduce the environmental impact of products throughout their life cycle, including setting requirements for product design, energy consumption, and durability (Heyen et al., 2017). It complements the new Directive by ensuring that products are designed to be more durable and energy-efficient from the outset.

6. Economic and Environmental Impacts

Assess the economic and environmental implications of the Directive, taking into account its potential impacts on businesses, consumers, and the environment. The Directive's economic impact is multifaceted, affecting businesses, consumers, and the repair sector in various ways. For businesses, the Directive introduces new obligations and costs related to the availability of spare parts, repair information, and product design for repairability (Grigore & Kifor, 2021). Manufacturers may need to invest in redesigning their products to make them easier to

repair and establish systems for providing spare parts and repair information to consumers and independent repairers. These costs could be significant, particularly for smaller businesses that lack the resources to adapt quickly.

However, the Directive also presents opportunities for businesses. The increased demand for repairs could stimulate the growth of the repair sector, creating new job opportunities and business prospects for independent repairers and specialised service providers. Moreover, businesses that adopt the principles of repairability and sustainability can gain a competitive advantage, attracting environmentally conscious consumers who are willing to pay more for products designed to last.

On the consumer side, the Directive is expected to result in long-term cost savings. By making products more durable and repairable, consumers can avoid the need to replace them as frequently, reducing their overall expenditure on goods. The availability of spare parts and repair information will also empower consumers to repair their products themselves or seek out independent repair services, potentially saving money on costly manufacturer repairs. However, the initial cost of more durable and repairable products may be higher, which could be a barrier for some consumers.

The principles of the circular economy are crucial for achieving the Directive's goals because of their potential to promote efficient resource utilisation and minimise the environmental burdens associated with conventional linear production and consumption models(Ruiz et al., 2019). By emphasising product durability, repairability, and reuse, the Directive aligns with the circular economy's core tenets, encouraging a shift away from the "take-make-dispose" approach. The paradigm of regeneration is obvious in maintenance and retirement processes, where products are repaired, reused and disassembled (Diez et al., 2016).

7. Conclusion

The EU Directive on reducing, reusing and repairing represents a significant step forward in promoting sustainable consumption and waste reduction within the European Union. By granting consumers enforceable rights to product repair, the Directive addresses critical market shortcomings, incentivising manufacturers to design more durable and repairable products while empowering consumers to extend the lifespan of their goods.

The detailed legal analysis reveals the Directive's multifaceted nature, encompassing key aspects such as the scope of consumer rights, obligations imposed on manufacturers and sellers, and enforcement mechanisms. The Directive introduces a new legal framework that prioritises repair over replacement, challenging the prevailing culture of disposability that has contributed to environmental degradation and resource depletion (Michelini et al., 2017).

Moreover, the Directive's emphasis on access to spare parts, repair information, and independent repair networks is crucial for fostering a competitive and consumer-friendly repair market. This can lead to more significant innovation in the repair sector and more affordable repair options for consumers.

Looking ahead, the successful implementation of the Directive will require ongoing collaboration among policymakers, businesses, consumers, and other stakeholders.

References

Ackermann, L. (2018). Design for Product Care: Enhancing Consumers' Repair and Maintenance Activities. In The Design Journal (Vol. 21, Issue 4, p. 543). Routledge. https://doi.org/10.1080/14606925.2018.1469331

Adams, K. T., Osmani, M., Thorpe, T., & Thornback, J. (2017). Circular economy in construction: current awareness, challenges and enablers. In Proceedings of the

Institution of Civil Engineers - Waste and Resource Management (Vol. 170, Issue 1, p. 15). https://doi.org/10.1680/jwarm.16.00011

Boniface, C., Urquhart, L., & Terras, M. (2024). Towards a right to repair for the Internet of Things: A review of legal and policy aspects [Review of Towards a right to repair for the Internet of Things: A review of legal and policy aspects]. Computer Law & Security Review, 52, 105934. Elsevier BV. https://doi.org/10.1016/j.clsr.2024.105934

Camilleri, M. A. (2020). European environment policy for the circular economy: Implications for business and industry stakeholders. In Sustainable Development (Vol. 28, Issue 6, p. 1804). Wiley. https://doi.org/10.1002/sd.2113

Chaudhary, R. (2005). Consumer Protection Law. https://openlibrary.org/books/OL13149012M/Consumer_Protection_Law

Chen, C. (2019). Improving Circular Economy Business Models: Opportunities for Business and Innovation. In Johnson Matthey Technology Review (Vol. 64, Issue 1, p. 48). Johnson Matthey. https://doi.org/10.1595/205651320x15710564137538

Chiaraluce, G., Bentivoglio, D., & Finco, A. (2021). Circular Economy for a Sustainable Agri-Food Supply Chain: A Review for Current Trends and Future Pathways [Review of Circular Economy for a Sustainable Agri-Food Supply Chain: A Review for Current Trends and Future Pathways]. Sustainability, 13(16), 9294. Multidisciplinary Digital Publishing Institute. https://doi.org/10.3390/su13169294

Cuijpers, C. (2009). The Influence of ICT on Consumer Protection; Empowerment or Impairment of the Consumer? In SSRN Electronic Journal. RELX Group (Netherlands). https://doi.org/10.2139/ssrn.1515790

Diez, L., Marangé, P., & Levrat, É. (2016). Maintenance best way for meeting the challenge of regeneration. In IFAC-PapersOnLine (Vol. 49, Issue 28, p. 49). Elsevier BV. https://doi.org/10.1016/j.ifacol.2016.11.009

Directive (EU) 2024/1799 of the European Parliament and of the Council of 13 June 2024 on common rules promoting the repair of goods and amending Regulation (EU) 2017/2394 and Directives (EU) 2019/771 and (EU) 2020/1828, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202401799

Directive (EU) 2024/825 of the European Parliament and of the Council of 28 February 2024 amending Directives 2005/29/EC and 2011/83/EU as regards empowering consumers for the green transition through better protection against unfair practices and through better information, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202400825

Errington, M., & Childe, S. J. (2013). A business process model of inspection in remanufacturing. In Journal of remanufacturing (Vol. 3, Issue 1). Springer Science+Business Media. https://doi.org/10.1186/2210-4690-3-7

European Commission, (2023). Impact assessment report; Accompanying the document Proposal for a Directive of the European Parliament and of the Council on common rules promoting the repair of goods and amending Regulation (EU)2017/2394, Directives (EU) 2019/771 and (EU) 2020/1828https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023SC0059

European Commission, (2019). Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Commitee and the Commitee of the Regions. The European Green Deal.

Giliker, P. (2016). The Consumer Rights Act 2015 – a bastion of European consumer rights? In Legal Studies (Vol. 37, Issue 1, p. 78). Cambridge University Press. https://doi.org/10.1111/lest.12139

Grigore, N. A., & Kifor, C. V. (2021). Are electric vehicles eco-friendly products? A review from life cycle and sustainability perspective [Review of Are electric vehicles

eco-friendly products? A review from life cycle and sustainability perspective]. MATEC Web of Conferences, 343, 7002. EDP Sciences. https://doi.org/10.1051/matecconf/202134307002

Hatta, M. (2020). The Right to Repair, the Right to Tinker, and the Right to Innovate. In Annals of Business Administrative Science (Vol. 19, Issue 4, p. 143). https://doi.org/10.7880/abas.0200604a

Hernández, R. J., Miranda, C., & Goñi, J. (2020). Empowering Sustainable Consumption by Giving Back to Consumers the 'Right to Repair.' In Sustainability (Vol. 12, Issue 3, p. 850). Multidisciplinary Digital Publishing Institute. https://doi.org/10.3390/su12030850

Heyen, D. A., Hermwille, L., & Wehnert, T. (2017). Out of the Comfort Zone! Governing the Exnovation of Unsustainable Technologies and Practices. In GAIA - Ecological Perspectives for Science and Society (Vol. 26, Issue 4, p. 326). oekom verlag. https://doi.org/10.14512/gaia.26.4.9

Hörnle, J., Littler, A., Tyson, G., Padumadasa, E., Schmidt-Kessen, M. J., & Ibosiola, D. (2018). Evaluation of Regulatory Tools for Enforcing Online Gambling Rules and Channelling Demand towards Controlled Offers. https://doi.org/10.2873/253036

Jin, C., Yang, L., & Zhu, C. (2022). Right to Repair: Pricing, Welfare, and Environmental Implications. In Management Science (Vol. 69, Issue 2, p. 1017). Institute for Operations Research and the Management Sciences. https://doi.org/10.1287/mnsc.2022.4401

Jones, P., & Comfort, D. (2021). The Circular Economy: An Exploratory Case Study from the Paper and Retail Industries. In Athens Journal of Business & Economics (Vol. 7, Issue 4, p. 379). https://doi.org/10.30958/ajbe.7-4-5

Kanamugire, J. C., & Chimuka, T. V. (2014). The Current Status of Exemption Clauses in the South African Law of Contract. Mediterranean Journal of Social Sciences. https://doi.org/10.5901/mjss.2014.v5n9p164

Lefebvre, M., Lofthouse, V., & Wilson, G. T. (2018). Towards a Circular Economy: exploring factors to repair broken electrical and electronics products by users with pro-environmental inclination. In Proceedings of DRS. https://doi.org/10.21606/drs.2018.556

Lopez-Bermúdez, Francisco; Xavier Vence. (2024). A critical assessment of the European Directive proposal on the common rules promoting the repair of goods, https://doi.org/10.1016/j.resconrec.2024.107996

Luzak, J. (2020). A Broken Notion: Impact of Modern Technologies on Product Liability. In European Journal of Risk Regulation (Vol. 11, Issue 3, p. 630). Cambridge University Press. https://doi.org/10.1017/err.2020.13

Mak, V., & Lujinovic, E. (2019). Towards a Circular Economy in EU Consumer Markets Legal Possibilities and Legal Challenges and the Dutch Example. In Zeitschrift für Europäisches Unternehmens- und Verbraucherrecht (Vol. 8, Issue 1, p. 4). Verlag Österreich. https://research.tilburguniversity.edu/en/publications/towards-a-circular-economy-in-eu-consumer-markets-legal-possibili

Michelini, G., Moraes, R. N., Cunha, R. N., Mascarenhas, J., & Ometto, A. R. (2017). From Linear to Circular Economy: PSS Conducting the Transition. Procedia CIRP, 64, 2. https://doi.org/10.1016/j.procir.2017.03.012

Mikula, K., Skrzypczak, D., Izydorczyk, G., Warchoł, J., Μουστάκας, K., Chojnacka, K., & Witek-Krowiak, A. (2020). 3D printing filament as a second life of waste plastics—a review [Review of 3D printing filament as a second life of waste plastics—a review]. Environmental Science and Pollution Research, 28(10), 12321. Springer Science+Business Media. https://doi.org/10.1007/s11356-020-10657-8

Pangburn, M. S., & Stavrulaki, E. (2022). From Used to New: Committing to Product Refresh Services. In Sustainability (Vol. 14, Issue 8, p. 4594). Multidisciplinary Digital Publishing Institute. https://doi.org/10.3390/su14084594

Rahla, K. M., Mateus, R., & Bragança, L. (2021). Selection Criteria for Building Materials and Components in Line with the Circular Economy Principles in the Built Environment—A Review of Current Trends. In Infrastructures (Vol. 6, Issue 4, p. 49). Multidisciplinary Digital Publishing Institute. https://doi.org/10.3390/infrastructures6040049

Regulation (EU) 2024/1781 of the European Parliament and of the Council of 13 June 2024 establishing a framework for the setting of ecodesign requirements for sustainable products, amending Directive (EU) 2020/1828 and Regulation (EU) 2023/1542 and repealing Directive 2009/125/EC: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202401781

Ruiz, L. A. L., Roca, X., & Gassó, S. (2019). The circular economy in the construction and demolition waste sector – A review and an integrative model approach [Review of The circular economy in the construction and demolition waste sector – A review and an integrative model approach]. Journal of Cleaner Production, 248, 119238. Elsevier BV. https://doi.org/10.1016/j.jclepro.2019.119238

Stevels, A., & Smit, E. (2019). The history of the take-back and treatment of consumer waste electrical and electronic equipment at Philips. In Elsevier eBooks (p. 647). Elsevier BV. https://doi.org/10.1016/b978-0-08-102158-3.00024-0

Sevcenko, T., Laitala, K., & Danko, Y. (2019). Understanding Consumer E-Waste Recycling Behavior: Introducing a New Economic Incentive to Increase the Collection Rates. In Sustainability (Vol. 11, Issue 9, p. 2656). Multidisciplinary Digital Publishing Institute. https://doi.org/10.3390/su11092656

Weale, A., Pridham, G., Cini, M., Konstadakopulos, D., Porter, M., & Flynn, B. (2002). Packaging and Packaging Waste. In Oxford University Press eBooks (p. 410). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199257478.003.0016