

Coherence in law: A way to stimulate the transition towards a circular economy? A critical analysis of the European Commission's aspiration to achieve full coherence between chemicals legislation and waste legislation – and product legislation

Ida Mae de Waal 

Maastricht Journal of European and
Comparative Law
2021, Vol. 28(6) 760–783
© The Author(s) 2021



Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/1023263X211048604
maastrichtjournal.sagepub.com



Abstract

This article examines the (lack of) coherence between the legislative fields that govern the life cycle of materials and products and thus are relevant to the transition towards a circular economy in the EU: EU chemicals, product and waste legislation. After examining the notion of coherence in law, it provides insight into the role of coherence in EU chemicals, product and waste legislation in light of the transition towards a circular economy. The article examines the (possible) issues that exist at the interface between these three legislative fields by reviewing literature and EU policy documents and looks into the relation between these issues and the (lack of) coherence between EU chemicals, product and waste legislation. It is argued that, when looked at in light of the transition towards a circular economy, several issues might be related to a lack of coherence. Nonetheless, the aspiration to achieve full coherence should be looked at critically.

Keywords

Coherence, circular economy, EU chemicals legislation, EU product legislation, EU waste legislation

PhD candidate at the Utrecht Centre for Water, Oceans and Sustainability Law (UCWOSL), Utrecht University, Utrecht, The Netherlands

Corresponding author:

Ida Mae de Waal, Utrecht Centre for Water, Oceans and Sustainability Law (UCWOSL), Utrecht University, Newtonlaan 201, 3584 BH Utrecht, The Netherlands.

E-mail: i.m.dewaal@uu.nl

I. Introduction

The European Union (EU) is currently at the start of a transition towards a circular economy (CE). While there is no undisputed definition for ‘circular economy’,¹ the definition used by the European Commission (EC) describes a CE as an economy ‘where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste is minimised’.² The EU transition towards a CE can be argued to have its concrete beginnings with the 2015 EU action plan ‘Closing the loop’.³ However, the concepts and ideas on which the CE is based are not new. They are building upon previous initiatives and developments,⁴ starting with Stahel,⁵ the philosophy of Cradle to Cradle,⁶ life cycle thinking and the life cycle approach,⁷ followed at the EU level by *inter alia* the ‘Integrated Product Policy’⁸ of 2001 and the ‘Roadmap to a Resource Efficient Europe’⁹ of 2011. Also, the transition to a circular economy is said to be the EU synonym for the development towards ‘Sustainable Materials Management’.^{10,11}

The EU has already taken several steps related to EU legislation to stimulate the transition towards a CE, such as the recent amendment of the Waste Framework Directive (WFD).¹² However, in literature and in EU policy documents it is reflected that multiple situations can be identified where the reuse or recycling of materials and products is hampered by legislation or where there are unexploited opportunities to enhance the transition towards a CE in the EU through legal measures. This gives rise to the assumption that the current legal system does not fully support and stimulate the transition towards a CE. Several of the issues relate to

-
1. J. Kirchherr, D. Reike and M. Hekkert, ‘Conceptualizing the Circular Economy: An Analysis of 114 Definitions’, 127 *Resources, Conservation & Recycling* (2017), p. 221–232.
 2. Commission Communication, Closing the loop – An EU action plan for the Circular Economy, COM(2015) 614 final, p. 2.
 3. Ibid. The transition towards a circular economy was already previously announced, see: Decision No 1386/2013/EU ‘Living well, within the limits of our planet’, Annex I, para 1. Also, a previous CE action plan (Commission Communication, Towards a circular economy: A zero waste programme for Europe, COM(2014) 398 final/2) was repealed and replaced by the 2015 action plan.
 4. See also: L. Milos, ‘Advancing to a Circular Economy: Three Essential Ingredients for a Comprehensive Policy Mix’, 13 *Sustain Sci* (2018), p. 864.
 5. W.R. Stahel, ‘The Product-Life Factor’ in S.G. Orr (ed.), *An Inquiry into the Nature of Sustainable Societies: The Role of the Private Sector* (Houston Area Research Centre, 1982), p. 72–96.
 6. W. McDonough and M. Braungart, *Cradle to Cradle: Remaking the Way We Make Things* (North Point Press, 2002).
 7. See e.g. H.C. Bugge, C. Dalhammar and E. Maitre-Ekern, ‘Developing Legislation to Prevent Environmental Damage from Products: A Herculean but Necessary Task’, in E. Maitre-Ekern, C. Dalhammar and H.C. Bugge, *Preventing Environmental Damage from Products* (Cambridge University Press, 2018), p. 2–3.
 8. Green Paper on Integrated Product Policy, COM(2001) 68 final; Commission Communication, Integrated Product Policy: Building on Environmental Life-Cycle Thinking, COM(2003) 302 final.
 9. Commission Communication, Roadmap to a Resource Efficient Europe, COM(2011) 571 final.
 10. See e.g.: Council conclusions, ‘Sustainable materials management and sustainable production and consumption: key contribution to a resource-efficient Europe’, 17495/10 13 Dec 2010; T.J. de Römph, ‘Pressing Forward— Developments in the Transition Towards Sustainable Materials Management in EU Environmental Law’, in V. Mauerhofer (ed.), *Legal Aspects of Sustainable Development* (Springer International Publishing, 2016), p. 513–514.
 11. H. Friege et al., ‘How Should We Deal with the Interfaces Between Chemicals, Product and Waste Legislation?’, 31 *Environ Sci Eur* (2019), p. 2; T.J. de Römph, in V. Mauerhofer (ed.), *Legal Aspects of Sustainable Development*, p. 519; G. van Calster and L. Reins, *EU Environmental Law* (Edward Elgar Publishing, 2017), p. 270.
 12. Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste, [2018] OJ L 150/109.

interaction between the legislation concerning the life cycle of materials and products,¹³ namely EU chemicals legislation (REACH, Classification, Labelling and Packaging Regulation), product legislation (Ecodesign Directive), and waste legislation (WFD).¹⁴ For example, a misalignment can be detected between the rules on hazard classification in chemicals legislation (CLP Regulation) and waste legislation (WFD).¹⁵ This leads to uncertainty about the hazardousness of materials that re-enter the economy, therewith hampering the reuse or recycling of the materials concerned. In short, there exist issues at the interface between EU chemicals, product and waste legislation which hamper the transition towards a CE.

After identifying several issues, the EC states in the document ‘Options to address the interface between chemical, product and waste legislation’ that ‘the longer term aspiration must be to achieve *full coherence* between the laws implementing waste and chemicals policies’ to ‘help to achieve the aim that materials are safe, fit-for-purpose and designed for durability, recyclability and have a low environmental impact’.¹⁶ This statement not only suggests that the coherence between waste legislation and chemicals legislation is currently not optimal or even lacking, but more importantly that ‘to achieve full coherence’ is a means to tackle identified issues and re-shape the legal system to stimulate the transition towards a CE. This article focuses therefore on the aspiration ‘to achieve full coherence’ as a means to achieve the abovementioned aim, without claiming that it is *the* means to help to achieve this aim.

A first question that is raised by the EC’s aspiration is what is actually meant by achieving ‘full coherence’. Coherence in law seems to be considered as something one cannot be opposed to, as a coherent legal system is linked to several positive aspects, such as legitimacy or legal certainty. Notwithstanding, coherence is a vague notion and has no formal definition; it is not immediately clear what is meant by (full) coherence and how it will be achieved. The EC’s aspiration should therefore be looked at with a critical eye, as the vagueness of the notion means that it is not possible to say in advance which actions and arguments the aspiration for coherence comprises;¹⁷ aspiring to coherence might run the risk of being a discursive strategy. As yet, no in-depth research has yet been conducted on the meaning and the motive of the EC’s aspiration ‘to achieve full coherence’.

13. See section 4.

14. This research is limited to Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, [2006] OJ L 396/1, Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, [2008] OJ L 353/1, Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, [2012] OJ L 315/1 and the WFD. See section 4.A.

15. A. Bernard and V. Buonsante, Report for the European Environmental Bureau (2017), p. 10.

16. Commission Communication, On the implementation of the circular economy package: options to address the interface between chemical, product and waste legislation, COM(2018) 32 final, p. 7; Commission Staff Working Document, ‘On the implementation of the circular economy package: options to address the interface between chemical, product and waste legislation’, SWD(2018) 20 final, p. 4.

17. See e.g.: S. Pethick, ‘On the entanglement of coherence’, 27 *Ratio Juris* (2014), p. 124, 131.

Chemicals and waste legislation, together with product legislation, concern the life cycle of materials and products.¹⁸ Focusing on the relation between these three areas of law is therefore not only in line with, but also indicated by life cycle thinking, which is key in a CE.¹⁹ Achieving coherence between chemicals, product and waste legislation might lead to a more circular legislative system, which covers the whole life cycle of materials and products and in which circularity and life cycle thinking are taken into account.²⁰ With this in mind, another question that can be asked is why product legislation is not included in the EC's aspiration 'to achieve full coherence', even though product legislation governs the life cycle of materials and products and needs to be taken into account in the transition towards a CE. In short, product legislation is therefore, contrary to the EC's aspiration, included in this article's examination of achieving coherence as well.

With the EC's aspiration as a starting point, this article will first look into the notion of coherence in law in general (section 2). Subsequently, it will argue that product legislation is to be included in the article's examination (section 3), in order to examine the role of coherence between the areas of law that govern the life cycle of materials and products and thus are relevant to stimulate a CE in the EU: EU chemicals, products and waste legislation (section 4). It will be examined whether a coherent legal framework concerning the whole life cycle of products and materials might indeed be a means to stimulate the transition towards a CE. To this end, the article will subsequently examine some of the (possible) issues that exist at the interface between EU chemicals, product and waste legislation by reviewing literature and EU policy documents and it will look into the question if achieving (full) coherence could be a means to tackle these issues and therewith stimulate the transition towards a CE.

2. The notion of coherence in law

The EC aspires to 'full coherence'. Yet, there is no formal definition of coherence.²¹ The following will try to clarify the meaning of and the possible reason(s) for the EC's aspiration 'to achieve full coherence', by providing a non-comprehensive overview of attempts to clarify the notion of coherence in law, and by looking into the desirability of a coherent legal system, as well as critiques on coherence in law. This discussion is limited to coherence in law, more specifically to what in literature is distinguished as the coherence of norms (normative coherence),²² and does not intend to provide a comprehensive overview or discussion of the notion of coherence in law.

A. What is understood by coherence in law?

The notion of coherence in law is often linked to the notion of consistency. Consistency in law can be described as two rules being consistent when they create the same outcome on the same facts and

18. See e.g. COM(2018) 32 final.

19. T.J. de Römph and G. van Calster, 'REACH in a circular economy: The obstacles for plastics recyclers and regulators', 27 *RECIEL* (2018), p. 277; T.J. de Römph, *The Legal Transition Towards a Circular Economy* (KU Leuven and UHasselt, 2018), p. 36.

20. See footnote 71.

21. See e.g. S. Berteau, 'Looking for Coherence within the European Community', 11 *ELJ* (2005), p. 160.

22. See further about 'types' of coherence in law e.g. *ibid.*, p. 157. However, see for critique on these 'types' of coherence: S. Pethick, 27 *Ratio Juris* (2014).

as the components of a legal system being in symmetry.²³ In short, the meaning of consistency can be described as ‘the absence of logical contradictions’.²⁴ However, it is commonly understood that there is a difference between coherence and consistency, despite the fact that both concepts are interrelated.²⁵ While there are some dissenting opinions,²⁶ in literature there seems to be a wide agreement on the *negative* explanation of coherence in law as a lack of inconsistency.²⁷ Law can thus only be coherent if it is also consistent. However, it is argued that this is not the case the other way around: law can be consistent even though it is incoherent.²⁸ This makes consistency a ‘necessary but not sufficient condition’ of the notion of coherence.²⁹

The above demonstrates that coherence is considered ‘something more’ than just the absence of contradictions or logical inconsistency.³⁰ However, it is not evident what this ‘something more’ actually entails, as there is no agreement in literature on the *positive* explanation of the notion of coherence.³¹ Coherence is as such described in multiple ways, for instance as to ‘make sense’ as a whole,³² or as ‘intelligible, mak[ing] sense, [being] well-expressed, with all its bits hanging together’.³³ Furthermore, coherence within a legal system is considered to be linked to the underlying principle(s) of the legal system, as a legal system is said to be coherent when the legal norms derive from the same (set of) principle(s),³⁴ or when there is a ‘single justificatory rationale’ that underpins the legal system and to which the functioning of the law consistently corresponds.³⁵ MacCormick describes coherence of norms as ‘a matter of their “making sense” by being rationally related as a set, instrumentally or intrinsically, either to the realization of some common value or values; or to the fulfilment of some common principle or principles’.³⁶

-
23. E. Herlin-Karnell and T. Konstadinides, ‘The Rise and Expressions of Consistency in EU Law: Legal and Strategic Implications for European Integration’, 15 *CYELS* (2013), p. 141–142.
24. A. Schiavello, ‘On “Coherence” and “Law”’: An Analysis of Different Models’, 14 *Ratio Juris* (2001), p. 236.
25. See e.g.: P.W. Brouwer, ‘Over coherentie in Recht’, 21 *Rechtsfilosofie en Rechtstheorie* (1992), p. 181; G. Mathisen, ‘Consistency and Coherence as Conditions for Justification of MS Measures Restricting Free Movement’, 47 *CML Rev.* (2010), p. 1024.
26. See e.g.: L.J. Wintgens, ‘Coherence of the Law’, 79 *ASRP* (1993), p. 483–519; S. Pethick, ‘Solving the Impossible: The Puzzle of Coherence, Consistency and Law’, 59 *NILQ* 2008, p. 395–409.
27. S. Berteau, ‘The Arguments from Coherence: Analysis and Evaluation’, 25 *Oxford Journal of Legal Studies* (2005), p. 371.
28. E.g.: A. Schiavello, 14 *Ratio Juris* (2001), p. 236.
29. R. Alexy and A. Peczenik, 3 *Ratio Juris* (1990), p. 130; A. Peczenik, ‘Law, morality, coherence and truth’, 7 *Ratio Juris* (1994), p. 167.
30. R. Alexy and A. Peczenik, 3 *Ratio Juris* (1990), p. 130; S. Berteau, 25 *Oxford Journal of Legal Studies* (2005), p. 371–372.
31. S. Berteau, 25 *Oxford Journal of Legal Studies* (2005), p. 371; C.N.K. Franklin, ‘The Burgeoning Principle of Consistency in EU Law’, 30 *YEL* (2011), p. 47–48; S. Berteau, 11 *ELJ* (2005), p. 156–157.
32. N. MacCormick, ‘Coherence in Legal Justification’, in A. Peczenik, L. Lindahl and G.C. van Roermund (eds.), *Theory of Legal Science* (D. Reidel Publishing Company, 1984), p. 235; N. MacCormick, *Legal Reasoning and Legal Theory* (Clarendon Press, 1978), p. 152.
33. J. Raz, *Ethics in the Public Domain: Essays in the Morality of Law and Politics* (OUP, 1995), p. 280.
34. K. Tuori, *Ratio and Voluntas* (Ashgate, 2011), p. 164–165; J. Smits and P. Letto-Vanamo, ‘Introduction’, in P. Letto-Vanamo and J. Smits, *Coherence and Fragmentation in European Private Law* (Sellier European Law Publishers, 2012), p. 2.
35. J. McGarry, ‘The Possibility and Value of Coherence’, 34 *Liverpool Law Review* (2013), p. 18.
36. N. MacCormick, in A. Peczenik, L. Lindahl and G.C. van Roermund (eds.), *Theory of Legal Science*, p. 238.

B. Is a coherent legal system desirable?

Coherence is described as ‘an ideal feature of law’,³⁷ as a ‘fundamental, albeit not absolute, value in every legal system’,³⁸ and as ‘a specific good, the value of which is undeniable’.³⁹ The notion of coherence is linked to the statement that a legal system needs to make sense as a whole and has to be intelligible, which are deemed essential requirements to law.⁴⁰ Furthermore, the desirability of a coherent legal system is linked to legitimacy and is considered to have more moral authority than an incoherent legal system.⁴¹

In addition to the above, a coherent legal system also has several secondary positive aspects. First, it is argued that coherence helps to ensure the realization of values within a legal system, such as legal certainty. Legal certainty is *inter alia* promoted by the fact that in a coherent system of law the legal rules are more easily remembered, applied and obeyed than in an incoherent system.⁴² Second, it is claimed that a coherent legal system helps to ensure legal equality, because only in a legal system in which rules are applied in a coherent way, it is possible to treat like cases alike.⁴³ Third, coherence encourages the effectiveness and efficiency of law.⁴⁴ However, despite the positive aspects of coherence, there is also critique on the striving for coherence within legal systems.

C. Critique on coherence in law

One of the first points of the critique on coherence in law is the argument that the fact that a legal system is coherent or not, does not relate to the righteousness of the underlying principle(s) or rationale of the legal system. The coherence of a legal system does not say anything about the system being a ‘good’ legal system.⁴⁵ A second criticism concerns the fact that coherence in law cannot be guaranteed. A statement about the coherence within a system of legal norms or rules can only be made against the background of what we think to know about the situations in which the norms or rules are applied. This knowledge influences the possibilities and limitations in the striving for coherence; full coherence can only be achieved if we know each and every situation in which the norms or rules are and will be applied.⁴⁶ In line with this it is stated that coherence is a matter of degree as there are many options that lie between the most incoherent and the most coherent legal system; there are no authoritative

37. S. Berteau, 25 *Oxford Journal of Legal Studies* (2005), p. 369. See also: B. Sheehy and D. Feaver, 38 *UNSW Law Journal* (2015), p. 397.

38. S. Berteau, 11 *ELJ* (2005), p. 170. See also: J. McGarry, 34 *Liverpool Law Review* (2013), p. 17.

39. J. Raz, *Ethics in the Public Domain: Essays in the Morality of Law and Politics*, p. 280.

40. S. Berteau, 11 *ELJ* (2005), p. 170; K. Kress, ‘Coherence’, in D. Patterson (ed.), *A Companion to Philosophy of Law and Legal Theory* (Blackwell Publishing Ltd, 2010), p. 523.

41. J. McGarry, 34 *Liverpool Law Review* (2013), p. 17–18, 21, 26.

42. A. Amaya, ‘Ten Theses on Coherence in Law’, in M. Araszkiwicz and J. Šavelka (eds.), *Coherence: Insights from Philosophy, Jurisprudence and Artificial Intelligence* (Springer, 2013), p. 259; J. McGarry, 34 *Liverpool Law Review* (2013), p. 18, 22–23; E. Herlin-Karnell and T. Konstadinides, 15 *CYELS* (2013), p. 142.

43. E.g. J.M. Smits, ‘The Complexity of Transnational Law: Coherence and Fragmentation of Private Law’, *University of Helsinki Legal Studies Research Paper Series* 1 (2010), p. 115; J. McGarry, 34 *Liverpool Law Review* (2013), p. 18, 22.

44. A. Amaya in M. Araszkiwicz and J. Šavelka (eds.), *Coherence: Insights from Philosophy, Jurisprudence and Artificial Intelligence*, p. 259; J. McGarry, 34 *Liverpool Law Review* (2013), p. 23.

45. A. Schiavello, 14 *Ratio Juris* (2001), p. 237–238; J. McGarry, 34 *Liverpool Law Review* (2013), p. 25.

46. P.W. Brouwer, 21 *Rechtsfilosofie en Rechtstheorie* (1992), p. 184.

rules to determine which system is more coherent than the other.⁴⁷ A third argument is that solely focusing on the coherence of the legal system may be ineffectual if it neglects the fact that there might be no consensus about how the legal situation or the problem should be addressed.⁴⁸

Also, there can be several secondary disadvantages to a coherent legal system. First, striving for a fully coherent legal system can be at the expense of the adequacy and flexibility of the system,⁴⁹ and can discourage experimentation in designing law.⁵⁰ In addition, it is stated that secondary benefits – such as legal certainty – can also be present in systems that are not fully coherent.⁵¹ Lastly, it should be noted that attempts of improving the coherence within a legal system, for example by means of simplification, should not come at the cost of *inter alia* the quality of the legislation or the realization of the underlying objectives of the system.⁵²

A general point of critique concerns the fact that the notion of coherence remains ‘unhelpfully elusive’, despite the multiple abovementioned attempts to define coherence. Pethick states that the vagueness of coherence is caused by a methodological oversight: characteristics (such as intelligibility) of the object that is considered coherent (such as a legal system) are in literature being misidentified as characteristics of coherence itself.⁵³ In his opinion, coherence means just ‘sticking together’; the above attempts are merely descriptions of coherence in particular instances, despite the fact that the attempts claim to define coherence in law in general.⁵⁴ This methodological oversight can also be applied to the distinction into types or kinds of coherence, such as normative coherence, meaning that these types or kinds just refer to the different cohering objects they concern.⁵⁵

D. Subconclusion

Despite attempts in literature to clarify and define the notion of coherence in law, it remains elusive and a formal definition is absent. It is therefore not immediately clear what the EC’s aspiration ‘to achieve full coherence’ entails. For the purpose to continue the research into the EC’s aspiration and the role of coherence in EU chemicals, product and waste legislation, an operational definition of coherence is formulated. It should be noted, however, that this article does not attempt to provide yet another final definition of coherence in law, but merely provides an operational definition of the notion of coherence in law in this specific context.

As there seems to be consensus on the *negative* explanation of coherence as a lack of inconsistency, a first prerequisite of this operational definition is that legal norms are consistent. Since

47. A. Schiavello, 14 *Ratio Juris* (2001), p. 237; C. Tietje, ‘The Concept of Coherence in the Treaty on European Union and the Common Foreign and Security Policy’, 2 *EFA Rev.* (1997), p. 212–217.

48. T.S. Aagaard, ‘Environmental Law as a Legal Field: An Inquiry in Legal Taxonomy’, 95 *Cornell Law Review* (2010), p. 235.

49. J. McGarry, 34 *Liverpool Law Review* (2013), p. 21, 25.

50. T.S. Aagaard, 95 *Cornell Law Review* (2010), p. 235.

51. J. McGarry, 34 *Liverpool Law Review* (2013), p. 25; K. Kress, in D. Patterson (ed.), *A Companion to Philosophy of Law and Legal Theory*, p. 523–524.

52. See e.g.: H. Tegner Anker et al., ‘Coping with EU Environmental Legislation – Transposition Principles and Practices’, 27 *Journal of Environmental Law* (2015), p. 18, 42.

53. S. Pethick, 59 *NILQ* 2008, p. 403.

54. S. Pethick, 27 *Ratio Juris* (2014), p. 118–119, 130–136.

55. *Ibid.*, p. 122.

coherence is considered something more than consistency, the operational definition is complemented by using the parts of the various statements that are sufficiently concrete to be actually tested. This has led to the following definition, which will be used in the remainder of this article: a legal system is considered coherent:

1. when the legal norms are consistent;
2. when the legal norms derive from the same (set of) principle(s) or when there is a single rationale that underpins the legal system; and
3. when the legal norms are to fulfil or realize this (set of) principle(s) or rationale.

While the literature generally refers to just coherence, the EC speaks of *full* coherence. Following the operational definition, this would be explained as completely fulfilling the above prerequisites. However, it is questionable if this is possible and desirable (see section 2.C).

As the analysis concerns EU law, it is furthermore relevant to briefly look at the notion of coherence in light of the EU legal order. Both coherence and consistency are mentioned in EU primary law, for example with regard to the EU's obligation to ensure *consistency* between its policies and activities (Article 7 TFEU).⁵⁶ In literature, opinions differ if the Treaties distinguish between consistency and coherence,⁵⁷ and neither term is explained in EU primary law itself.⁵⁸ With regard to 'Better Regulation' the EU has, however, described coherence, namely as 'looking at how well or not different actions work together',⁵⁹ which might either highlight synergies in achieving common *objectives* or tensions that indicate contradictory objectives or lead to inefficiencies.⁶⁰ In line with this, the operational definition of coherence will be complemented by this description of coherence, such that the underlying (set of) principle(s) or rationale of the legal systems – as set out in the second and third prerequisite – will, for the sake of this research, be regarded as the objective(s) of the legal systems.

Despite the absence of a formal definition, coherence is deemed an ideal feature of law, *inter alia* because a coherent legal system forms a rational and understandable whole and is considered being more legitimate, as well as helping to ensure legal certainty and legal equality and encouraging efficiency and effectiveness. However, at the same time it is stated that the fact that a legal system is coherent or not does not say anything about the system being a 'good' legal system and that coherence can never be guaranteed. Also, it is important that coherence should not be achieved at all costs, as coherence may be ineffectual if there is no consensus about the handling of the legal situation or problem and as striving for coherence can cause inflexibility and hamper innovations.

In short, having a coherent legal system in place is considered desirable as it is commonly linked to multiple benefits, but it is important to note that, because of the lack of a clear meaning and the

56. See also e.g. Article 11(3), 13(1) TEU and 121(3), 256(2)(3), 349 TFEU.

57. Official versions of the Treaty in other languages (which are equally authentic: Case C-283/81 *CILFIT v Ministry of Health*, EU:C:1982:335, para. 18) seem not to refer to 'consistency' but 'coherence', e.g. in German ('*Kohärenz*') and French ('*cohérence*') (Article 11(3)TEU and 7 TFEU): C.N.K. Franklin, 30 *YEL* (2011), p. 50; C. Tietje, 2 *EFA Rev.* (1997), p. 213–214.

58. T.J. de Römph, *The Legal Transition Towards a Circular Economy*, p. 200.

59. Commission Staff Working Document, 'Better Regulation Guidelines', SWD(2017) 350 final, p. 4.

60. SWD(2017) 350 final, p. 62–63. See also: 'Better Regulation "Toolbox"', <https://ec.europa.eu/info/sites/info/files/better-regulation-toolbox.pdf>, p. 352; Commission Staff Working Document, 'Better Regulation Guidelines', SWD(2015) 111 final, p. 59.

abovementioned critiques, aspiring coherence should not be too easily considered as a goal in itself,⁶¹ and should even be looked at critically to prevent it being a deceitful or disguised promise to solve (legal) problems.

3. Coherence between chemicals and waste legislation – and product legislation

As stated in the introduction, the EC has the aspiration ‘to achieve full coherence between the laws implementing waste and chemicals policies’. This implies that achieving full coherence between just chemicals and waste legislation might be a way to tackle the issues that the EC identified at the interface between chemicals, product and waste legislation and therewith stimulate the transition towards a CE. However, it can be argued to be surprising that the EC’s aspiration is limited to chemicals and waste legislation only, while the aim is to help to achieve ‘that materials are safe, fit-for-purpose and designed for durability, recyclability and have a low environmental impact’.⁶² In line with life cycle thinking, which is key in a CE, it can thus be argued that product legislation should also be included in the aspiration to achieve this aim, as chemicals, waste, *and* product legislation govern the life cycle of materials and products. In my opinion, therefore, the transition towards a CE could be stimulated to a greater extent if product legislation – that is, the legislation that regulates products on the EU market, concerning multiple product related factors, such as safety and energy efficiency⁶³ – will be included in the aspiration to achieve full coherence as well.⁶⁴

There are multiple arguments for focusing not only on chemicals and waste legislation, but on product legislation too. In the first place, the transition from a linear to a circular economy requires the embedding of product legislation.⁶⁵ Stimulating eco-design in legislation is considered key in applying the life cycle approach.⁶⁶ Also, approximately 80% of a product’s environmental impact is determined at the design stage,⁶⁷ which is amongst others governed by product legislation. Second, including product legislation would make it possible to tackle issues which are related to or could better be dealt with by means of product legislation, for example by setting certain product requirements,⁶⁸ or by better integrating the end-of-life phase of products or aspects related to recycling in product legislation.⁶⁹ This is also underlined by the outcome of the stakeholder consultation

61. See also, but in an international law context: N. Nic Suibhne, *The Coherence of Free Movement Law* (OUP, 2013), p. 38, referring to the ILC Report: *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law*, A/CN.4/L/682 (2006), para. 491.

62. See footnote 16.

63. Product legislation consists of more general product legislation, e.g. Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on general product safety, [2002] OJ L 011/4 and the Ecodesign Directive, and specific product legislation, e.g. Directive 2009/48/EC of the European Parliament and of the Council of 18 June 2009 on the safety of toys, [2009] OJ L 170/1. However, this research solely focuses on the Ecodesign Directive.

64. See e.g.: H. Friege et al., 31 *Environ Sci Eur* (2019), p. 15.

65. See e.g.: SWD(2018) 20 final, p. 7.

66. T.J. de Römph, in V. Mauerhofer (ed.), *Legal Aspects of Sustainable Development*, p. 525.

67. SWD(2018) 20 final, p. 6; Commission Communication, A new Circular Economy Action Plan: For a cleaner and more competitive Europe, COM(2020) 98 final, p. 3; European Commission, *Ecodesign Your Future: How Ecodesign Can Help the Environment by Making Products Smarter* (EU, 2012), p. 3.

68. H. Friege et al., 31 *Environ Sci Eur* (2019), p. 14.

69. BIO Intelligence Service, ‘Study on coherence of waste legislation’ (2011), Final report for European Commission (DG ENV), p. 42, 11–12, 71, 101; T.J. de Römph, in V. Mauerhofer (ed.), *Legal Aspects of Sustainable Development*, p. 525, 527; H. Friege et al., 31 *Environ Sci Eur* (2019), p. 15–16.

of the EC document ‘Options to address the interface between chemical, product and waste legislation’, in which the use of product legislation was identified as a means to ‘address the chemical and waste related issues in products’.⁷⁰ Third, if the aspiration to achieve coherence would include EU chemicals, product and waste legislation, this might lead to a more circular legislative system, which covers the whole life cycle and in which circularity and life cycle thinking are integrated.⁷¹

Including product legislation can furthermore be said to be in line with the policy of the EC itself, even though it is not explicitly mentioned in its original aspiration of achieving full coherence. In the first place, this is apparent from the aim of the aspiration, namely to ‘help to achieve the aim that materials are safe, fit-for-purpose and designed for durability, recyclability and have a low environmental impact’.⁷² As stated by the EC, product policy – and therewith also the laws implementing this policy – relates to the ‘durability, reparability and recyclability of materials’.⁷³ Also, it is stated that at the design stage hazardous substances or substances of concern can to a great degree be prevented, substituted or minimized.⁷⁴ Second, the options that the EC mentions for tackling the identified issues at the interface more than once include product legislation. For example, with regard to the issue related to the end-of-waste status, the EC states that ‘it is imperative that there is adequate coherence between the waste and the product legislation to ensure that, by compliance with a single and clear set of requirements, the transition from waste to product can be achieved’.⁷⁵ Third, it can be considered remarkable that the EC did not include product legislation in its aspiration, while in the 2020 CE action plan the legislative initiative for a coherent product policy is stated to be ‘developed in a way to improve the coherence with existing instruments regulating products along various phases of their life cycle’.⁷⁶ This suggests that product legislation plays a role in improving the coherence of the legislative framework regulating products throughout their life cycle.

In conclusion, the EC stated the aspiration to achieve full coherence between chemicals and waste legislation. This might stimulate the transition towards a CE, but an aspiration to achieve full coherence between chemicals, waste *and* product legislation might bring additional benefits and therefore stimulate the transition even more. Therefore, the focus of this article will be on the coherence between EU chemicals and waste, as well as product legislation.

4. Coherence in light of the transition towards a CE

This section is limited to looking more closely into the role of coherence in EU chemicals, product and waste legislation and focuses on coherence within this EU legislative system, or ‘horizontal

70. SWD(2018) 20 final, p. 7.

71. T.J. de Römph, *The Legal Transition Towards a Circular Economy*, p. 35, 81, 369; H. Friege et al., 31 *Environ Sci Eur* (2019), p. 15. See also e.g.: Commission Staff Working Document, Sustainable Products in a Circular Economy – Towards an EU Product Policy Framework contributing to the Circular Economy, SWD(2019) 91 final; SWD(2018) 20 final; COM(2018) 32 final; Council conclusions, Closing the loop – An EU action plan for the Circular Economy, 10518/16, 21 June 2016; European Parliament resolution of 9 July 2015 on resource efficiency: moving towards a circular economy (2014/2208(INI)).

72. COM(2018) 32 final, p. 7; SWD(2018) 20 final, p. 4.

73. SWD(2018) 20 final, p. 5–6.

74. SWD(2018) 20 final, p. 6.

75. SWD(2018) 20 final, p. 14.

76. COM(2020) 98 final, p. 4.

coherence'.⁷⁷ This notwithstanding, it is recognized that the notion of coherence is also of interest to and of importance in an EU primary law context, as well as an EU environmental law,⁷⁸ or even EU policy context.⁷⁹

After focusing on the current presence of the notion of coherence within EU chemicals, product and waste legislation, the state of the art of both literature and EU policy documents will be discussed. Subsequently, this section will discuss the issues that are identified at the interface between chemicals, product and waste legislation and analyse the role of coherence in the creation of these issues. This analysis of coherence will be based on the operational definition of coherence as set out in section 2.D.

A. The notion of coherence in EU chemicals, product and waste legislation

The following examination is narrowed down to the notion of coherence in EU chemicals, product and waste legislation in light of the transition towards a CE. As already shortly discussed in the introduction, a CE aims to maintain the value of products, materials and resources in the economy for as long as possible, while minimizing the generation of waste.⁸⁰ To maintain the value of these materials and products, for example by means of reuse and recycling, a focus on the whole life cycle or life cycle thinking is key in a CE.⁸¹ Therefore, the focus of this research is the legislation which concerns this life cycle of materials and products: EU chemicals, product and waste legislation. The notion of coherence is not only of importance within these three areas of law itself, but also with regard to the interface between them as these areas of legislation each govern different stages of the life cycle of materials and products. To be able to assess the overall environmental impact of a material or product during its life cycle, the life cycle should be looked at in its entirety. This can be described as 'life cycle thinking'.⁸² Life cycle thinking enables the optimization of the life cycle of materials or products. By looking at the life cycle in its entirety, it can be prevented that improvement in one stage of the life cycle leads to higher environmental impact at another stage.⁸³ It is stated that to stimulate the transition towards a CE, an optimal regulatory management of the whole life cycle of product and materials should be ensured.⁸⁴ The following will therefore not only focus on the presence and role of the notion of coherence in EU chemicals, product and waste legislation, but also on the CE and the concept of life cycle thinking.

77. As opposed to vertical coherence, i.e. the coherence between the legal orders of the EU and its MSs. See e.g.: C. Tietje, 2 *EFA Rev.* (1997), p. 224–225. This research is furthermore limited to the role of coherence in the EU legal system as such, and not e.g. on the relation between (inter)national law and EU law.

78. See e.g.: M. Peeters and R. Uylenburg (eds.), *EU Environmental Legislation* (Edward Elgar Publishing Limited, 2014), p. 5; Commission Working Document, Better Regulation and the Thematic Strategies for the Environment, COM(2005) 466 final.

79. See e.g.: L. den Hertog and S. Stroß, 'Coherence in EU External Relations: Concepts and Legal Rooting of an Ambiguous Term', 18 *EFA Rev.* (2013), p. 376–377.

80. COM(2015) 614 final, p. 2.

81. See footnote 19.

82. T. Turunen, *The Concepts of Waste and Non-waste in the Circular economy* (Publications of the University of Eastern Finland, 2018), p. 52.

83. See e.g.: H.C. Bugge, C. Dalhammar & E. Maitre-Ekern, in E. Maitre-Ekern, C. Dalhammar and H.C. Bugge, *Preventing Environmental Damage from Products*, p. 2–3; T.J. de Römph, in V. Mauerhofer (ed.), *Legal Aspects of Sustainable Development*, p. 517–518.

84. L. Milos, 13 *Sustain Sci* (2018), p. 862.

It will be examined if, and to what extent, both coherence, life cycle thinking and the CE are reflected in the actual texts of the main legal acts: REACH, CLP Regulation, Ecodesign Directive and the WFD. These can be considered the key legislations of their respective areas of law with regard to the transition towards a CE, based on the CE Action Plans and their impact on the life cycle of materials and products.⁸⁵ They are also, to varying degrees, comprehensive legislative frameworks in their areas of law. REACH, the CLP Regulation and WFD apply in principle to all chemical substances and waste respectively, while product legislation consists of numerous other legal acts besides the Ecodesign Directive.⁸⁶

In REACH the notion of coherence is not explicitly mentioned, but the connection with the waste stage and the importance of taking into consideration the whole life cycle of substances becomes apparent with regard to the preparing of chemicals safety reports, including inter alia the chemical safety assessments,⁸⁷ exposure assessments,⁸⁸ exposure scenarios⁸⁹ and the compilation of safety data sheets.⁹⁰ For example, with regard to the exposure assessments 'all stages of the life-cycle of the substance resulting from the manufacture and identified uses' have to be considered.⁹¹ This means that the waste stage of the life cycle of a material or product does play a role in REACH, even though waste is not a substance under REACH.⁹² In contrast, in the CLP Regulation neither the coherence between chemicals, product and waste legislation nor the life cycle nor the CE are mentioned explicitly.

As regards product legislation, in the recitals of the Ecodesign Directive it is mentioned that 'synergies between the Ecodesign Directive' and other legal acts 'should contribute to increasing their respective impacts and building coherent requirements for manufacturers to apply'.⁹³ Amongst these other legal acts are chemicals legislation, such as REACH and the CLP Regulation, and also specific legislation, such as the Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive).⁹⁴ With regard to these synergies, (specific) waste legislation is also mentioned, namely the Waste Electrical and Electronic Equipment Directive (WEEE Directive).⁹⁵ As synergies can be argued to be related to coherence, this shows that coherence between the Ecodesign Directive and chemicals and waste legislation is deemed to be something that can advance the impacts of these three areas of law.⁹⁶ Furthermore, the importance of the whole life cycle of products is mentioned

85. See e.g. COM(2015) 614 final; COM(2020) 98 final; T.J. de Römph, *The Legal Transition Towards a Circular Economy*, p. 39.

86. There is no framework directive in product legislation that deals with all environmental aspects of products (E. Maitre-Ekern, *Towards a Circular Economy for Products*, Series of dissertations of University of Oslo No. 144, 2019, p. 158–159).

87. Annex I 0.3 REACH. See also e.g. Annex XII REACH.

88. Annex I 5.0 REACH.

89. Article 3.37 REACH; Annex I 0.7 REACH. See also Article 18(4)(a) REACH.

90. Annex I 5.1.1. and 5.2.2. REACH respectively Annex II Section 13 REACH.

91. Annex I 5.0 REACH.

92. Article 2.2 REACH. See: D. Langlet and S. Mahmoudi, *EU Environmental Law and Policy* (OUP, 2016), p. 312.

93. Recital 35 (Directive 2009/125/EC).

94. Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, [2011] OJ L 177/88.

95. Recital 35 (Directive 2009/125/EC).

96. M. Cremona, 'Coherence Through Law: What Difference Will the Treaty of Lisbon Make?', 3 *Hamburg Review of Social Sciences* (2008), p. 16.

regularly in the Ecodesign Directive.⁹⁷ It appears in the definition of ecodesign, which is defined as ‘the integration of environmental aspects into product design with the aim of improving the environmental performance of the product throughout its whole life cycle’.⁹⁸ Also, the setting of ecodesign requirements and therewith the reducing of the environmental impact of energy-related products can concern the whole life cycle of products.⁹⁹ Moreover, the ecodesign requirements can include aspects related to resource efficiency or other aspects that contribute to the CE.¹⁰⁰ This also corresponds with the aim of previous developments such as Integrated Product Policy,¹⁰¹ and will be enhanced by future developments, such as the Sustainable Products Initiative.¹⁰²

Finally, in light of transforming waste management into sustainable materials management and making the economy circular,¹⁰³ the WFD explicitly mentions not only the need to look at the whole life cycle of materials and products, but also the need to ensure and improve the coherence between chemicals, product and waste legislation.¹⁰⁴ For example, recital 4 states the need for ensuring the coherence between WFD and related legislative acts such as *inter alia* REACH,¹⁰⁵ and recital 38 states the necessity of improving the coherence between EU chemicals, product and waste legislation in order to achieve the objective of non-hazardous material cycles.¹⁰⁶ In other recitals and articles the link between chemicals, product and waste legislation also becomes apparent.¹⁰⁷ Furthermore, life cycle thinking lies at the basis of the waste hierarchy of the WFD.¹⁰⁸

In short, in the main legal acts the importance of taking into consideration the whole life cycle of substances, materials and products is mentioned in all three areas of law, but the coherence between chemicals, product and waste legislation is only explicitly mentioned in the WFD and more implicitly in the Ecodesign Directive. Nevertheless, from this appears that the coherence between these three areas of law is considered of importance, and even – as is stated in the WFD – that this coherence should be improved. In the following section, this will be further elaborated upon.

B. The notion of coherence in literature and EU policy concerning the CE

In literature it is acknowledged that the legislation relating to the life cycle of materials – EU chemicals, product and waste legislation – is not yet completely coherent.¹⁰⁹ For example, De Römph stresses the importance of aligning ‘the different stages of a material life-cycle in legislation’;¹¹⁰ in

97. See more extensively: C. Dalhammar, ‘The Application of “Life Cycle Thinking” in EU Environmental Law: Theory and Practice’, 12 *JEEPL* (2015).

98. Article 2.23 Ecodesign Directive.

99. See e.g. Article 2 (12) and (23), Annex I Ecodesign Directive; C. Dalhammar, 12 *JEEPL* (2015), p. 98.

100. A.M. Bundgaard, A. Remmen and K.O. Zacho, Ecodesign Directive Version 2.0: From Energy Efficiency to Resource Efficiency, Miljøstyrelsen (2015), p. 43–44; SWD(2019) 91 final, p. 21.

101. See e.g. recital 13 (Directive 2009/125/EC). See also section 1.

102. Inception Impact Assessment, Sustainable Products Initiative, 11 September 2020, Ares(2020)4754440.

103. Recitals 1, 2 (Directive 2018/851/EU).

104. Recitals 4, 38 (Directive 2018/851/EU).

105. Recital 4 (Directive 2018/851/EU).

106. Recital 38 (Directive 2018/851/EU).

107. Recitals 17, 19, 38 (Directive 2018/851) and Articles 6, 9 WFD.

108. BIO Intelligence Service, Final report for European Commission (DG ENV), p. 98. See also: Article 4 (2) WFD; C. Dalhammar, 12 *JEEPL* (2015), p. 98, 114–118.

109. R. Hughes, ‘The EU Circular Economy Package – Life Cycle Thinking to Life Cycle Law?’, 61 *Procedia CIRP* (2017), p. 14; T.J. de Römph, *The Legal Transition Towards a Circular Economy*, p. 36.

particular the alignment between chemicals legislation (REACH) and waste legislation could be improved to stimulate the transition towards a CE.¹¹¹ This is also emphasized by Turunen, who states that there are ‘problematic aspects’ at the interface between chemicals and waste legislation,¹¹² and by Backes, who underlines that there are complex questions at the interface between chemicals, product and waste legislation which should be looked at ‘much more in mutual connection’.¹¹³

The importance of the interaction between EU chemicals, product and waste legislation for the transition towards a CE also becomes apparent in EU policy. This was explicitly mentioned in the CE action plan of 2015, in which the EC announced further work on an analysis and policy options to address this interaction.¹¹⁴ In addition, both the European Parliament and the Council of the European Union stressed the necessity to create a more coherent legal framework concerning the life cycle of products and to create more consistency between existing (legal) instruments.¹¹⁵

In the EC communication ‘Options to address the interface between chemical, product and waste legislation’ the EC completely focuses on this interface, addressing (indirectly) also the coherence between the different areas of law. After identifying multiple issues at the interface, the EC eventually expressed the aspiration ‘to achieve full coherence between the laws implementing waste and chemicals policies’ to ‘help to achieve the aim that materials are safe, fit-for-purpose and designed for durability, recyclability and have a low environmental impact’.¹¹⁶ Eventually, this should lead to the situation where products contain a minimal use of substances of concern so their reuse can be furthered in a way that leads to maximal economic benefits, while protecting human health and the environment.¹¹⁷ In the accompanying Staff Working Document, in which the identified issues and options for solutions are worked out in more detail, the coherence between chemicals and waste, as well as product legislation, is featured occasionally.¹¹⁸ However, neither this document nor the subsequent documents on the implementation of the CE action plan or the 2020 CE action plan further elaborate on the aspiration of the EC to achieve full coherence. Nevertheless, in the 2020 action plan coherence was mentioned, but only with regard to the initiative to develop a coherent product policy framework, which will be developed so as to improve the coherence between instruments that regulate various stages of the product life cycle.¹¹⁹

C. Issues at the interface between EU chemicals, product and waste legislation

The previous section gave an overview of the occasional calls for more coherence between EU chemicals, product and waste legislation that are made by the EC, European Parliament and the Council as well as in literature, which suggest that the way that this legislation interacts with each

110. T.J. de Römph, in V. Mauerhofer (ed.), *Legal Aspects of Sustainable Development*, p. 527.

111. *Ibid.*, p. 524.

112. T. Turunen, *The Concepts of Waste and Non-waste in the Circular Economy*, p. 122

113. C.W. Backes, ‘The Waste Framework Directive and the Circular Economy’, in M. Peeters and M. Eliantonio (eds.), *Research Handbook on EU Environmental Law* (Edward Elgar Publishing, 2020), p. 342–343.

114. COM(2015) 614 final, p. 12.

115. European Parliament resolution of 9 July 2015 on resource efficiency: moving towards a circular economy (2014/2208(INI)), para 15, 77; Council conclusions, 10518/16, 21 June 2016, para. 6, 7.

116. COM(2018) 32 final, p. 7.

117. *Ibid.*

118. SWD(2018) 20 final.

119. COM(2020) 98 final, p. 3–4. See also: Decision No 1386/2013/EU, Annex, para. 35; COM(2015) 614 final, p. 4.

other is currently not optimal. Furthermore, in both EU policy documents and in literature multiple issues or problems are identified at the interface between EU chemicals, product and waste legislation that form barriers to the transition towards a CE. This section provides a non-exhaustive overview of these issues.

In the policy document in which the aspiration to achieve full coherence was stated, the EC set out the following four ‘main’ issues, of which some are also mentioned in literature. The first issue concerns the providing of information on the presence of substances of concern or hazardous substances.¹²⁰ This information is not easily available to actors in the waste phase, like those who handle waste and prepare it for recovery,¹²¹ or even gets lost during the life cycle of the material or product.¹²² As a result, the market for secondary materials and products is hampered.¹²³ The second issue is formed by the legacy substances problem, meaning that waste can contain substances that are not allowed any longer.¹²⁴ At the moment, there is no framework in place that specifically deals with these legacy substances.¹²⁵ The third issue is created by the fact that the EU end-of-waste rules are not fully harmonized, which leads to uncertainty regarding the transformation of waste into a new material or product.¹²⁶ This may not only lead to legal uncertainty for authorities and operators, but may also *inter alia* hinder the take-up of secondary materials and products.¹²⁷ The fourth issue concerns the misalignment of the hazardous classification rules in chemical and waste legislation.¹²⁸ This can lead to the situation where under chemicals legislation (CLP Regulation) substances are classified as hazardous, while under waste legislation (WFD) the waste, regardless what form, is classified as non-hazardous.¹²⁹ For example, lead metal is classified as hazardous under chemicals legislation, but classified as non-hazardous under waste legislation.¹³⁰ The same counts for PVC containing DEHP.¹³¹ These examples show that the misalignment in hazardous classification rules in some cases leads to differences in the risk management in the chemical phase and

120. COM(2018) 32 final, p. 2–3. See also: SWD(2018) 20 final, p. 7–10; Commission Staff Working Document, Fitness Check of the most relevant chemicals (excluding REACH), as well as related aspects of legislation applied to downstream industries, SWD(2019) 199 final/2, Part 1/3, p. 96.

121. Commission Report, On the implementation of the Circular Economy Action Plan, COM(2017) 33 final, p. 13; Commission Staff Working Document, On the implementation of the Circular Economy Action Plan, SWD(2019) 90 final, p. 9; COM(2018) 32 final, p. 2–3.

122. See e.g.: OVAM, Juridische knelpunten bij circulaire economie projecten (2019), p. 35; A. Bernard and V. Buonsante, Report for the European Environmental Bureau (2017), p. 29.

123. SWD(2018) 20 final, p. 8.

124. COM(2018) 32 final, p. 4; SWD(2018) 20 final, p. 10–12. See also: SWD(2019) 199 final/2, p. 96; A. Bernard and V. Buonsante, Report for the European Environmental Bureau (2017), p. 6.

125. SWD(2018) 20 final, p. 10.

126. COM(2018) 32 final, p. 5; SWD(2018) 20 final, p. 12–14.

127. SWD(2018) 20 final, p. 12–13.

128. COM(2018) 32 final, p. 6; SWD(2018) 20 final, p. 14–16.

129. A. Bernard and V. Buonsante, Report for the European Environmental Bureau (2017), p. 10.

130. Lead metal is classified as hazardous based on the CLP Regulation, but is listed as non-hazardous in the European List of Waste (Commission Decision of 18 December 2014 amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council, [2014] OJ L 370/44). See COM(2018) 32 final, p. 6.

131. PVC containing DEHP is considered hazardous under chemicals legislation, but is by some waste operators considered non-hazardous under waste legislation. See COM(2018) 32 final, p. 6; SWD(2018) 20 final, p. 3.

the waste phase, which can lead to differences in the levels of protection, to possible risks for the environment and human health and to competitive inequalities.¹³² This will lead to uncertainty for authorities and operators and will eventually negatively affect the use of the secondary raw materials.¹³³

In literature, additional issues at the interface between EU chemicals, product and waste legislation are identified as causing barriers to the transition towards a CE. The first issue concerns the relation between chemicals legislation and waste legislation, more specifically between REACH and the WFD. This legislation is not only considered complex,¹³⁴ but the transition towards a CE is also forcing chemicals and waste legislation together, which leads to uncertainties as both areas of law ‘have been “living apart”’ for a long time.¹³⁵ For example, when someone is ‘recycling’ as regulated by the WFD, this can be considered to be similar to the ‘manufacturing process’ as regulated by REACH. This means that recyclers should comply with both the WFD and REACH at the same time. This could lead to difficulties, as both legal acts have their own obligations, procedures and terminology.¹³⁶ A second issue involves more general issues concerning coherence that are being caused by unclear relationships between legislations and unclear scopes, such as the relation between the RoHS Directive and REACH and between the RoHS Directive and the WEEE Directive. These issues can lead to legal uncertainty, double regulation, law breaches, market distortions and additional costs for operators.¹³⁷ Finally, another issue relates to the implementation of EU chemicals, product and waste legislation by the MSs, which can result in differences at the MS level and could therefore enlarge the issues that exist regarding the coordination and coherence between the three legislative fields.¹³⁸

D. The relation between the identified issues and the coherence between EU chemicals, product and waste legislation

At the interface between chemicals, product and waste legislation several issues are identified which hamper the transition towards a CE. As stated before, the coherence between chemicals, product, and waste legislation is considered not optimal and might therefore be (part of) the cause of these issues. It is necessary to investigate whether these issues are indeed related to coherence, before the question can be answered whether achieving (full) coherence between chemicals, product and waste legislation can be a solution for the identified issues. Following the previously given operational definition of coherence, the identified issues at the interface between EU chemicals, product and waste legislation are considered to be related to a lack of coherence when they (i)

132. SWD(2018) 20 final, p. 3, 15; A. Bernard and V. Buonsante, Report for the European Environmental Bureau (2017), p. 10, 16–17.

133. SWD(2018) 20 final, p. 3, 15;

134. T. Turunen, *The Concepts of Waste and Non-waste in the Circular Economy*, p. 122.

135. C. Bodar et al., ‘Risk Management of Hazardous Substances in a Circular Economy’, 212 *Journal of Environmental Management* (2018), p. 109.

136. T.J. de Römph, *The Legal Transition Towards a Circular Economy*, p. 310–312.

137. BIO Intelligence Service, Final report for European Commission (DG ENV), p. 71.

138. E.g. between waste directives: *ibid.*, p. 10, 71.

are caused by inconsistency, or (ii) do not derive from the same objective(s) underpinning the legal system, or (iii) when the legal norms are not to fulfil or realize this objective(s) (see section 2.D).

1. Inconsistency. The first prerequisite to determine if the issues are related to a lack of coherence is inconsistency. Consistency is considered to be a necessary condition for coherence, meaning that law can only be coherent if it is also consistent. Issues that are caused by inconsistency are thus also related to a lack of coherence. With regard to the identified issues above, it seems probable that the issue concerning the misalignment of hazardous classification rules is caused by or related to inconsistency. In the first place this is apparent from the related policy document, in which the objective with regard to this issue is to 'ensure a more consistent approach' between both sets of rules.¹³⁹ From this can be deduced that both sets of rules are not yet fully consistent. According to the EC this can lead to the situation in which a material is not considered hazardous during the time it classifies as waste, but will be hazardous when it will return to the market as a secondary raw material.¹⁴⁰ In literature, it is stated that this is caused by the fact that the hazard classification rules under EU chemicals and waste legislation do not relate to the same 'subject matter'.¹⁴¹

2. The underlying objectives of EU chemicals, product and waste legislation. The second and third prerequisite of the operational definition are more difficult to test against. As stated before, in line with the way the EU evaluates coherence, the underlying (set of) principle(s) or rationale of the legal systems are in this research understood as the underlying *objective(s)* of the legal systems. This examination is preceded by the question what should be seen as the legal system. While in this research the coherence between EU chemicals, product and waste legislation is looked into, these three areas of law do not (yet) form one whole and currently are three separate areas of law. Therefore, it is in line with the present situation to consider EU chemicals legislation, EU product legislation and EU waste legislation as three separate legal systems. However, as the aim of this research is to look into the coherence between these three systems in light of the transition towards a CE, the underlying objectives of the three legal systems in itself will be examined first, and afterwards will be compared not only to each other, but also to the objectives of the CE and life cycle thinking, in order to uncover possible overlaps, gaps or tensions.

A preliminary remark with regard to the underlying objectives concerns the so-called integration principle of Article 11 TFEU, which requires that environmental protection requirements must be integrated in all the EU's other policies and activities. It could thus be argued that less value may be attached to the separate objectives of the legal systems and legal acts, as by means of Article 11 TFEU environmental protection is 'a general objective of EU law' and has to be incorporated in all EU policies.¹⁴² However, the integration principle does not prescribe how this should be pursued,¹⁴³ and also does not guarantee coherence. It is therefore still useful to look at the objectives of these systems.¹⁴⁴

139. SWD(2018) 20 final, p. 15.

140. Ibid.

141. A. Bernard and V. Buonsante, Report for the European Environmental Bureau (2017), p. 10.

142. E. Maitre-Ekern, 'Exploring the Spaceship Earth: A Circular Economy for Products', in E. Maitre-Ekern, C. Dalhammar and H.C. Bugge, *Preventing Environmental Damage from Products*, p. 42; B. Sjøfjell, 'The Legal Significance of Article 11 TFEU for EU Institutions and Member States', in B. Sjøfjell & A. Wiesbrock (eds.), *The Greening of European Business under EU Law: Taking Article 11 TFEU Seriously* (Routledge, 2015). See in general e.g.: L. Krämer, *EU Environmental Law* (Sweet & Maxwell, 2016), p. 21–23, 397–403.

The underlying objectives of EU chemicals legislation are stated to be the ensuring of a high level of protection of human health and the environment from the adverse effects of hazardous chemicals and supporting the efficient functioning of the internal market for chemicals and enhancing competitiveness and innovation.¹⁴⁵ In addition, it is also an objective of EU chemicals legislation ‘to improve the knowledge of chemical hazards and risks’.¹⁴⁶ These objectives are reflected in the text of REACH (Article 1(1)),¹⁴⁷ and the CLP Regulation (Article 1(1)).¹⁴⁸ The underlying objective of EU product legislation is to improve the environmental performance of products – up to now limited to energy-related products – that are brought to the market in the EU, by means of ecodesign requirements.¹⁴⁹ This should not only ensure the free movement of (energy-related) products within the EU, but by reducing the environmental impact of these products the environment is to be protected as well.¹⁵⁰ These objectives can be found in the text of the Ecodesign Directive (Article 1(1) and (2)).¹⁵¹ Lastly, the underlying objective of the WFD is the protection of the environment and human health against the harmful effects of waste generation and management.¹⁵² In the WFD, these objectives are also reflected in the text of the Directive (Article 1 and 13).¹⁵³

When compared to each other, it is noticeable that the underlying objectives of EU chemicals, product and waste legislation share the protection of the environment: EU chemicals legislation aims to protect the environment from the adverse effects of hazardous chemicals, the Ecodesign Directive aims to protect the environment by reducing the environmental impact of (energy-related) products, and the WFD aims to protect the environment of harmful effects of waste practices. While the objectives show an overlap with regard to the protection of the environment, differences can also be observed. First, while all have as (part of) their objective to protect the environment, only chemicals and waste legislation explicitly focus on the protection of human health as well. Second, chemicals legislation and the Ecodesign Directive explicitly address as their objective the functioning of the

143. E. Maitre-Ekern, C. Dalhammar and H.C. Bugge, *Preventing Environmental Damage from Products*, p. 11.

144. There is a linguistic difference between ‘objective’, ‘aim’ and ‘purpose’. However, these terms are often used interchangeably. In the remainder of this research, the term ‘objective(s)’ will be used, as this is in line with the wording of the evaluation of coherence with regard to Better Regulation.

145. SWD(2019) 199 final/2, p. 6; Commission Staff Working Document, Commission General Report on the operation of REACH and review of certain elements, SWD(2018) 58 final Part 1/7, p. 10; Commission Proposal, Proposal for a Regulation on classification, labelling and packaging of substances and mixtures, COM(2007) 355 final.

146. SWD(2019) 199 final/2, p. 6.

147. Also: recitals 1, 3, 4, 16, 80 (Regulation 1907/2006). See also: Commission notice on technical guidance on waste classification, C/2018/1447 OJ C 124/1, p. 9; L. Bergkamp, *The European Union REACH Regulation for Chemicals: Law and Practice* (OUP, 2013), p. 277; SWD(2018) 58 final Part 1/7, p. 10; Case C-558/07 R v *Secretary of State for the Environment, Food and Rural Affairs*, EU:C:2009:430, para. 35.

148. Also: recitals 1 and 3 (Regulation 1272/2008). See also: SWD(2019) 199 final/2, p. 79.

149. BIO Intelligence Service, Final report for European Commission (DG ENV), p. 41; T.J. de Römph, *The Legal Transition Towards a Circular Economy*, p. 41.

150. E.g. Commission Communication, Ecodesign Working Plan 2016–2019, COM(2016) 773 final, p. 2; Commission Proposal, Proposal for a Directive on establishing a framework for the setting of Eco-design requirements for Energy-Using Products, COM(2003) 453 final, p. 2–3; Commission Proposal, Proposal for a Directive establishing a framework for the setting of ecodesign requirements for energy related products, COM(2008) 399 final, p. 2.

151. Also: recitals 10, 41 (Directive 2009/125/EC), recitals 10, 60 (Directive 2012/27/EU).

152. E.g.: T. Turunen, *The Concepts of Waste and Non-waste in the Circular Economy*, p. 39, 40–41; G. van Calster, *Handbook of EU Waste Law* (OUP, 2006), p. 7. See also recital 6 (Directive 2008/98/EC); Case C-155/91 *Commission v Council*, EU:C:1993:98, para. 20.

153. Also: recitals 6, 49 (Directive 2008/98/EC), recital 64 (Directive 2018/851).

internal market of chemicals and energy-related products respectively. This is also reflected by the fact that REACH, the CLP Regulation and the Ecodesign Directive all have as their legal basis Article 114 TFEU,¹⁵⁴ while the legal basis of the WFD is Article 192 TFEU.¹⁵⁵ In the case of the Ecodesign Directive, the choice for Article 114 TFEU as its legal basis corresponds with its main objective,¹⁵⁶ being the ensuring of the free movement of (energy-related) products on the internal market. The same counts for the WFD, as it is based on Article 192 TFEU because its primary objective is the protection of the environment.¹⁵⁷ With regard to REACH, the ECJ stated that its main objective is both the protection of the environment and human health and the free movement of substances,¹⁵⁸ although its legal basis is Article 114 TFEU. It can thus be concluded that the main objective of the WFD is the protection of the environment, while the main objective of the CLP Regulation and the Ecodesign Directive is the ensuring of the free movement of chemicals and (energy related) products on the internal market, and the main objective of REACH covers both objectives.

3. The objectives in light of the CE and life cycle thinking. The following can be noted when the objectives of EU chemicals, product and waste legislation are looked at in more detail in light of the transition towards a CE and life cycle thinking, whereby both concepts will be considered together (see also section 4.A).

With regard to the objective of EU chemicals legislation, for example, the part of the objective to enhance innovation – which is explicitly mentioned in REACH – is meant to facilitate the development of safer chemicals by *inter alia* replacing substances of very high concern.¹⁵⁹ This is beneficial in light of the transition towards the CE as it contributes to the aim of maintaining products and materials in the economy.¹⁶⁰ Also, the contribution of REACH to the fulfillment of the World Summit Sustainable Development 2020 goals, and the contribution of the CLP Regulation in achieving sustainable development could be mentioned in this regard.¹⁶¹ In addition, REACH contains provisions that require taking into consideration the life cycle of substances (see section 4.A). However, CE considerations and/or life cycle thinking itself are not explicitly incorporated in the objectives of EU chemicals legislation.¹⁶²

In comparison, life cycle thinking falls within the objective of the Ecodesign Directive.¹⁶³ The importance of taking into consideration the whole life cycle of products also becomes apparent in

154. See for REACH: Commission Proposal, Proposal for a Regulation of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (Reach), establishing a European Chemicals Agency, COM(2003) 644 final. See for the CLP Regulation: COM(2007) 355 final. See for the Ecodesign Directive: COM(2003) 453 final, p. 12–13; COM(2008) 399 final, p. 5–6.

155. Commission Proposal, Proposal for a Directive on waste, COM(2005) 667, p. 7; Commission Proposal, Proposal for a Directive amending Directive 2008/98/EC on waste, COM(2015) 595, p. 4–5.

156. Committee on the Environment, Public Health and Consumer Policy, Report on the Proposal for a Directive on Establishing a Framework for the Setting of Eco-design Requirements for Energy-Using Products (2004), p. 69–71.

157. COM(2005) 667 final, p. 7.

158. Case C-558/07 R v *Secretary of State for the Environment, Food and Rural Affairs*, para. 44–45; S. Heselhaus, 'Registration Requirement for Monomer Substances integrated in Polymers under the REACH-Regulation', 2 *EJRR* (2010), p. 191.

159. SWD(2018) 58 final, p. 10–11.

160. See also: Amec Foster Wheeler, Study Supporting the Fitness Check on the Most Relevant Chemicals Legislation ('Fitness Check +') (2017), p. 129–130.

161. SWD(2018) 58 final, p. 10–11; SWD(2019) 199 final/2, p. 6; Recital 3 (Regulation 1272/2008).

162. SWD(2019) 199 final/2, p. 98; Amec Foster Wheeler, Study Supporting the Fitness Check on the Most Relevant Chemicals Legislation ('Fitness Check +') (2017), p. 129.

several provisions in the Ecodesign Directive, and certain aspects of the ecodesign requirements contribute to the CE (see section 4.A).¹⁶⁴ However, despite the fact that the objective of setting ecodesign requirements could be said to be in line with the transition towards a CE and provides opportunities in this regard, the scope of the Ecodesign Directive is currently still limited to energy-related products.¹⁶⁵ Thus, while the objective of the Ecodesign Directive provides opportunities for the transition towards a CE, these opportunities are not yet utilized to their full extent.¹⁶⁶

Life cycle thinking is also included in the objective of the WFD.¹⁶⁷ This appears from the text of the WFD (see section 4.A). In addition, the objective of the WFD was previously already linked to ensuring resource efficiency and creating a recycling society,¹⁶⁸ and is now explicitly linked to CE objectives and the transition to a CE. This is reflected in both the recitals and the text of the Directive. For example, Article 1 explicitly states that the Directive lays down measures ‘which are crucial for the transition to a circular economy’.¹⁶⁹ In short, both life cycle thinking and CE objectives are explicitly included in the objective of the WFD, and the objective of current EU waste legislation can even be said to be based on the CE action plan of the EU.¹⁷⁰

In summary, while there are overlaps, EU chemicals, product and waste legislation do not have the same underlying objective. Furthermore, when looking at the objectives in light of the CE transition and life cycle thinking, it can be noted that the objective of the Ecodesign Directive and the WFD include both life cycle thinking and CE objectives, although the transition towards the CE is only explicitly mentioned with regard to the WFD. By contrast, the objectives of chemicals legislation do not include the CE nor life cycle thinking. In conclusion, when looked at from a CE and life cycle thinking perspective, overlaps between the objectives of EU product and waste legislation can be found, but there remains a gap with regard to chemicals legislation.

EU chemicals, product and waste legislation may not have the same underlying objectives, but it cannot be said that the objectives from the individual legal systems conflict with the objectives of the CE and life cycle thinking. Also, they do not necessarily exclude the taking into account of the CE or life cycle thinking, even though they may not explicitly endorse those aspects. Nevertheless, several issues are identified that hamper the CE transition (section 4.C). From this may be concluded that these issues are not necessarily caused – and thus related to coherence – by the absence of a shared underlying objective, as it might not be impossible to take into account the CE or life cycle thinking. Instead, it may be concluded that the provisions of EU chemicals, product and waste legislation are currently not shaped or used in such a way that CE objectives or life cycle thinking are taken into account. An example is the issue concerning the providing of information on the presence of substances

163. C. Dalhammar, 12 *JEEPL* (2015), p. 110.

164. See e.g. Annex I Ecodesign Directive.

165. S. Svensson and C. Dalhammar, ‘Regulating Recyclability under the Ecodesign Directive’, in E. Maitre-Ekem, C. Dalhammar and H.C. Bugge, *Preventing Environmental Damage from Products*, p. 235; COM(2016) 773 final, p. 2–3. However, this may change, see e.g. Inception Impact Assessment ‘Sustainable Products Initiative’, 11 September 2020, Ares(2020)4754440.

166. A.M. Bundgaard, A. Remmen, K. Overgaard Zacho, Ecodesign Directive version 2.0 (2015), p. 45–46; COM(2016) 773 final, p. 2–3; SWD(2019) 91 final, p. 21.

167. Commission Report, Thematic Strategy on the Prevention and Recycling of Waste, COM(2011) 13 final, p. 2.

168. See e.g. Recital 28, 41 (Directive 2008/98/EC), article 11 (2) Directive 2008/98/EC. See also: COM(2011) 13 final, p. 2; BIO Intelligence Service, Final report for European Commission (DG ENV), p. 48.

169. Article 1 WFD. See also Article 11(2) WFD, recitals 1, 2, 7, 43 (Directive 2018/851).

170. T. Turunen, *The Concepts of Waste and Non-waste in the Circular Economy*, p. 41.

of concern or hazardous substances. While REACH and the CLP Regulation regulate and ensure this information flow, the provision and availability of the information on hazardous substances becomes less and less up the supply chain.¹⁷¹ This indicates that changes are necessary with regard to either the regulation of this information flow or with the way the availability of this information flow is ensured, for example by creating a legal obligation by means of which the information needs of the waste sector can be fulfilled or by reshaping the current information system.¹⁷²

To go even further, it may be assumed that, even if there are legal provisions or instruments that could stimulate the CE transition and life cycle thinking, these are insufficiently utilized, implemented, or mandatory to contribute to both aspects. An example can be found with regard to the Ecodesign Directive, which, although it requires to take *inter alia* resource efficiency into consideration when developing implementing measures,¹⁷³ is mainly focused on energy efficiency requirements.¹⁷⁴ Only in 2019 the first implementing regulation based on the Ecodesign Directive was adopted which not only contained energy efficiency requirements but also (some) CE requirements.¹⁷⁵ Another example that can be mentioned in this regard is the apparent poor implementation of the provisions in REACH that contain obligations to communicate information up the supply chain.¹⁷⁶

To conclude, while (part of) the identified issues may be related to a lack of coherence because of the absence of a shared underlying objective that underpins the legal systems (prerequisite ii), it seems to be more plausible to state that the identified issues may be related to coherence because the legal norms within the three systems are not designed to (completely) fulfil or realize the objectives (prerequisite iii), at least when looked at in light of the transition towards a CE and life cycle thinking.

5. Improving the coherence between EU chemicals, product and waste legislation – an outlook

It can be concluded that, according to the operational definition, EU chemicals, product and waste legislation are not coherent when looked at in light of the transition towards a CE and life cycle thinking. There seems to be possible inconsistency (prerequisite i), and, when the CE transition and life cycle thinking are taken as the starting point, the three areas of law do not share the same underlying objective (prerequisite ii), and the provisions do not fully realize that objective (prerequisite iii). From this might be concluded that achieving (full)

171. In contrast to substances of very high concern (SVHC). See: SWD(2018) 20 final, p. 7–8; Ökopol GmbH, Information Flows on Substances of Concern in Products from Supply Chains to Waste Operators (2020), p. 25.

172. See more extensively: Ökopol GmbH (2020), p. 25.

173. Annex I and Annex II Ecodesign Directive.

174. A.M. Bundgaard, M.A. Mosgaard and A. Remmen, 'From energy efficiency towards resource efficiency within the Ecodesign Directive', 144 *Journal of Cleaner Production* (2017), p. 368; COM(2016) 773 final, p. 2–3, 8.

175. Commission Regulation (EU) 2019/424 of 15 March 2019 laying down ecodesign requirements for servers and data storage products pursuant to Directive 2009/125/EC of the European Parliament and of the Council and amending Commission Regulation (EU) No 617/2013, [2019] OJ L 074/46; F. Mathieux, F. Ardente and S. Bobba, 'Ten Years of Scientific Support for Integrating Circular Economy Requirements in the EU Ecodesign Directive: Overview and Lessons Learnt', 90 *Procedia CIRP* (2020), p. 138. Afterwards, at least 10 other Regulations are adopted that also contain CE requirements, e.g.: Commission Regulation (EU) 2019/2019 of 1 October 2019 laying down ecodesign requirements for refrigerating appliances pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulation (EC) No 643/2009 [2019] OJ L 315/187.

176. SWD(2018) 20 final. p. 8. See: Title IV REACH, i.e. Articles 31, 32, 33, 34.

coherence between EU chemicals, product and waste legislation might indeed be a means to stimulate the transition towards a CE.

However, it should be kept in mind that the above is based on the operational definition of coherence, which was created for the means of this research. It has been shown that coherence is a vague concept, without a formal definition of what coherence entails (section 2). Therefore, the aspiration of the EC to achieve full coherence should be looked at with a critical eye, as it is from the outset unclear what is exactly meant by (full) coherence and how it will actually be realized. It can be considered to be a 'powerful discursive strategy' to aspire to coherence,¹⁷⁷ because coherence is linked to concepts that are considered desirable, such as legal certainty and legal equality, and are 'value neutral' such as efficiency and effectiveness. It could even be questioned whether the aspiration of creating coherence is not (also) a disguise. For example, with regard to the legacy substances problem and the issues that evolve around the use and presence of hazardous substances and substances of concern, the (gradually) phasing-out of substances could be a solution.¹⁷⁸ However, as this phasing-out takes time and can be expected to meet with resistance due to economic and commercial interests,¹⁷⁹ the EC would avoid this resistance by expressing that to achieve full coherence could be a means to overcome this issue, as well as other identified issues, instead.

Notwithstanding the foregoing, this research has shown that, according to the operational definition of coherence, EU chemicals, product and waste legislation is not coherent in light of the transition towards a CE and life cycle thinking and that aspiring to achieve coherence at this interface might stimulate this transition. It is therefore worth looking into possibilities to realize this. One of the possibilities that is mentioned in literature in this regard is envisaging EU materials law or even EU materials legislation. This would entail recognizing EU chemicals, product and waste legislation as one area of law respectively integrating these legislations into one piece of legislation, based on life cycle thinking and CE objectives. Especially creating materials legislation could be a way to decrease the inconsistency and incoherence between the different regulatory instruments.¹⁸⁰ However, the implications of the difference in legal basis of these instruments (Article 114 TFEU and 192 TFEU), such as the possibilities for MSs,¹⁸¹ and the difference in legal instruments (directives and regulations) are aspects that require further attention.¹⁸² Furthermore, while integration of the existing legislation will most likely result in (i) consistency and (ii) a shared underlying objective, a new system will only be coherent if the content of the materials legislation will also (iii) fulfill or realize the objective of life cycle thinking and the CE. More in general, it is important to note that integrating legislation does not per definition serve the objective which gave rise to the integration. This can for instance be seen with regard to the Dutch *Omgevingswet*, which is criticized because, despite integrating almost all environmental acts, it is said to fail to serve the part of its objective of achieving sustainable development.¹⁸³

177. L. den Hertog, 'In Defence of Policy Incoherence – Illustrations from EU External Migration Policy', in S. Carrera et al. (ed.), *EU External Migration Policies in an Era of Global Mobilities: Intersecting Policy Universes* (Brill Nijhoff, 2018) p. 369. This is argued with regard to 'policy coherence', but it can be argued that the same applies to coherence in law.

178. A. Bernard and V. Buonsante, Report for the European Environmental Bureau (2017), p. 35.

179. See also: T. Turunen, *The Concepts of Waste and Non-waste in the Circular Economy*, p. 125.

180. See with regard to EU environmental law in general e.g.: B. Beijen, in M. Peeters and R. Uylenburg (eds.), *EU Environmental Legislation*, p. 70-71, 84-86.

181. See *inter alia*: L. Krämer, *EU Environmental Law*, p. 76-81.

182. T.J. de Rõmph, *The Legal Transition Towards a Circular Economy*, p. 370-371.

Integrating EU chemicals, product and waste legislation and therewith creating ‘materials legislation’ could be a means to create consistency and a shared underlying objective. However, as appears from section 4.D, the identified issues seem to be (also) related to coherence because the objective of life cycle thinking and the CE is not realized. This is either because there are currently no legal provisions that take into account CE objectives or life cycle thinking, or because existing provisions are insufficiently utilized, implemented or mandatory to contribute to both aspects. With this in mind, another possibility to achieve coherence between EU chemicals, product, and waste legislation could be to develop new instruments, to improve existing instruments or to look into the best possible mixture of instruments in EU chemicals, product and waste legislation, whereby a higher priority is given to CE objectives and life cycle thinking.¹⁸⁴ As already briefly mentioned in the previous section, a possibility to solve the lack of information about the presence of (hazardous) substances in materials and products can, for example, consist of creating a legal obligation by means of which the information needs of the waste sector can be fulfilled or of reshaping the current information systems. Possibilities that can be mentioned in this regard are *inter alia* the use of tracking technologies,¹⁸⁵ enlarging the scope of the existing ECHA database, the publishing of Safety Data Sheets (SDS) online¹⁸⁶ or the replacement of SDSs with a new information system, such as a materials/product-passport kind of system.¹⁸⁷ A possibility to tackle the issue concerning the end-of-waste rules could for instance be the development of more EU end-of-waste criteria, as well as by-product criteria.¹⁸⁸ Other possibilities to help the achievement of ‘the aim that materials are safe, fit-for-purpose and designed for durability, recyclability and have a low environmental impact’¹⁸⁹ could for example be the development of legal requirements for mandatory recycled content for certain materials or products,¹⁹⁰ development and use of (decontamination) technology or analytical and quality control approaches.¹⁹¹

To summarize, according to the operational definition of coherence and when looked at in light of the transition towards a CE and life cycle thinking, EU chemicals, product and waste legislation can indeed be said to be not ‘fully’ coherent and several issues at its interface might be linked to this. However, the aspiration to achieve full coherence must continuously be looked at with a critical eye, to prevent it from being an (unintentional) discursive strategy that does not deliver on stimulating the transition towards a CE.

183. F.H. Kistenkas et al., ‘Implementing Sustainable Development into One Integrated Domestic Environmental Legislative Act. A Law Comparison Between Two Frontrunners: New Zealand and The Netherlands’, 29 *EEELR* (2020), p. 242–243; Article 1.3 *Omgevingswet*.

184. See e.g.: T.J. de Römph, *The Legal Transition Towards a Circular Economy*, p. 362.

185. See e.g. COM(2018) 32 final, p. 32; Council conclusions, Eco-innovation: enabling the transition towards a circular economy, 15811/17 18 Dec. 2017, para 10; Council conclusions, Delivering on the EU Action Plan for the Circular Economy, 10221/18 25 June 2018, para 16.

186. H. Friege et al., 31 *Environ Sci Eur* (2019), p. 7, 15–16.

187. Make it Work, ‘Making the Circular Economy Work’ (2019), p. 56; T.J. de Römph, *The Legal Transition Towards a Circular Economy*, p. 210, 217.

188. See e.g. Commission Report, On the implementation of the Circular Economy Action Plan, COM(2019) 190 final, p. 5. Also: COM(2018) 32 final, p. 5.

189. COM(2018) 32 final, p. 7.

190. Commission Communication, The European Green Deal, COM(2019) 640 final, p. 8.

191. SWD(2018) 20 final, p. 5.

The research in this article will be continued by examining whether and to what extent the findings on the role of coherence in EU chemicals, product and waste legislation in general also apply to and are present when regarding specific product streams and the corresponding legislation.


Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship and/or publication of this article.

ORCID iD

Ida Mae de Waal  <https://orcid.org/0000-0002-8650-2292>