

Clause No.	Paragraph	Comment by Arthur ten Wolde / Ecopreneur.eu	Proposed change
2.7		The crucial part that makes a business model circular, namely recovery, is omitted from in 2.7 about the business model.	<p>1. Add the words "and recovers" to create the following sentence: organization's chosen system of interconnected and interdependent decisions and activities that determines how it creates, delivers, captures and recovers value over the short, medium and long term</p> <p>2. Add a note: NOTE 2 Traditional business models fail to address the recovery of value embedded in products and materials</p>
2.31		The definition of materials is unclear about their nature, which is important for the circular economy which distinguishes between a technical and a biocycle.	<p>Add a note: <i>NOTE 2 Materials can be natural or synthetic. A natural material is any product or physical matter that comes from plants, animals, or the ground. Minerals and the metals that can be extracted from them (without further modification) are also considered to belong into this category. Types include biotic materials (e.g. wood, natural silk), inorganic materials (e.g. stone, copper, clay) and soil. Synthetic materials are made by chemically changing the starting substances to create a material with different characteristics (e.g. nylon, most plastics).</i></p>
2.59		<p>1. The definition is too narrow. Sharing economy already refers to far more than peer-to-peer</p> <p>2. You could choose that energy sharing could also be excluded from this Guide.</p> <p>3. Including services would be logical since the CE is all about services, and many services are resource-intensive</p>	<p>Change the text into: deployment of accessibility-based business models for markets in order to access products and services. This includes platform organizations with different organizational forms (peer-to-peer, business-to-business, cooperatives, peer-to-business-to-peer) and all possible forms of trade (buy, rent, lend, give, exchange, share), operating in seven different markets (goods, space, mobility, energy, money, knowledge, services). [source: Milieu-impact en -kansen deeleconomie, Ministerie van Infrastructuur en Milieu and shareNL, 2015]. The markets knowledge and money are excluded from this Guide because they lack a clear link with resource use.</p>
5.1		The picture is unclear in several ways:	1. Please make graphically clearer which text box belongs to which level, e.g. "Characterized by..." with Level 0. E.g. by color or by horizontal lines

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		<ul style="list-style-type: none"> - which text box belongs to which level? - what is the difference between level 3 and 4? Product/service innovation (Level 3) requires business model innovation (Level 4). An improved value proposition is an improved way of doing business and creating value. - The term Optimizing does not cover what the leading companies such as cradle-to-cradle are doing. 	<ul style="list-style-type: none"> 2. Clarify the difference between level 3 and 4. 3. Suggest to change Level 4 “Optimizing” into Level 4 “Leading”. Developing and implementing new circular business models 4. Suggest to change Level 3 into Engaged. Implementing circular business models
5.8		Kraaijenhagen Stage 4-9: Sketching the System, Visioning with Partners, Internal Transformation, Circular Business Model innovation, Internalising externalities, Contract	Merge with Kraaijenhagen approach
0.5		Also business management examples	Additionally the rise of agile and lean project management systems have had a quick uptake in both SMEs and multinational corporations such as SCRUM, Lean Six Sigma, Green Six Sigma and Agile, proving that lean business management is a trend already moving forward.

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7.6		Part of what is said here is beyond the scope of this Guide, controversial and should be removed. E.g. statement on landfilling: Questionable. Sometimes landfilling and waiting for new technologies or economic developments would be better than incineration	Add and adapt: The incineration of waste is highly controversial because of the tension between the immediate economic benefit of energy generation and the investments needed for long-term value recovery from waste streams. When considering the relative environmental benefits of extracting energy from residual waste, one of the key factors is climate change. The balance between the many factors that affect this is complex and much work has been done to understand it that is beyond the scope of this British Standard. As a general rule though, energy recovery from waste can play an important role in displacing fossil fuels and reducing an organization's climate impact. It is also likely to be better than landfill, assuming the plant is efficient enough at turning waste into usable energy, and residual waste has the right amount of renewable content.
2.5		There is a frequent misconception about biodegradable and biobased, the two being confused. This confusion can lead to decisions which may be well-intended but in fact lead away from circularity, and gives leeway to greenwashing of biobased solutions which are in fact not circular.	<i>NOTE 4 biodegradable should not be confused with biobased. Biobased means produced from natural resources, but natural resources can be converted into non-biodegradable materials, including those identical to synthetic materials such as plastics. While biobased has the perception of being "good", the actual circularity of products depends on the full cycle including delivery, usage and recovery.</i>
2.29.2		Fleece jackets are a bad example since they lead to micro fibres leaking out of the washing machine into the ocean, polluting it with	Strike the fleece jacket example: <i>NOTE 1 An example of an open loop system is the collection of plastic bottles and their being recycled into plastic drainage pipes fleece jackets.</i> Clarify NOTE 3 and 4. <i>Add a note:</i>

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		<p>microplastics that affect sea life.</p> <p>For an open loop, it is crucial to carefully address and if necessary investigate the health and environmental safety, which may differ from the conventional product based on raw materials</p> <p>We do not understand why NOTE 3 and 4 are presented as systematic outcomes.</p> <p>There is a vision in these notes that circular economy and recycling end up in products of lowest value.</p> <p>While we acknowledge that secondary materials may be of a lower grade than virgin, and upcycling is to be preferred over downcycling, new quality standards for secondary raw materials are in the making. And if you make a different product with different usage how is it possible to compare the value with the materials in the original product? In the case of one of our companies, a recycled plastic is incorporated as a</p>	<p>NOTE 7 For an open loop, it is crucial to carefully address and if necessary investigate the health and environmental safety of the reused, recycled or cascaded products, components or materials according to the laws and regulations for the alternative end products in their intended use and context, including the potential presence and impact of hazardous substances that may not be present when based on virgin materials</p>

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		secondary resource in a product that will have different technical characteristics and value than the initial, completely different product. In another case, a secondary raw material is used that would otherwise be discarded and definitively lost as a material. How is it possible in general to compare the value of the new product based on secondary raw materials from another product, and what does this matter if the materials is otherwise incinerated or landfilled?	
2.55		This definition conflicts with the term “preparing for reuse” used elsewhere in this Guide, because the term “preparing” ca include modifications, reprocessing or treatment.	Please clarify, this is outside of our expertise
0.6		Clarify bullit 5) about changing the business proposition, to provide	Add an opening sentence to bullit 5: 5) Switching to circular business models: using the circular economy principles as a framework for improving or completely changing the value proposition as a result of stimulating learning and innovation, thereby enabling

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		actual guidance	the organization to begin to transition to a more sustainable and circular mode of operation if it makes sense to do so. An example of this is illustrated in Annex A.
5.1		<p>1. We suggest to strike the word sustainability wherever possible to avoid confusion. The word “more” is not needed here since this sentence is about transitioning anyway.</p> <p>2. The following two bullets are referring to old-fashioned sustainability thinking: a) operating within planetary and social limits; and b)meeting market needs, desires and expectations. However, to make clear what the effects can be, maybe here it is a good idea to for once mention the word sustainable development in order to avoid the planetary boundaries which have an even stronger moral connotation. CE incorporates the limits into the value chain, hence automatically into the</p>	<p>In transitioning to a more sustainable and circular mode operation, organizations are likely to boost their business as well as sustainable development.</p> <p>It is important to recognize that, in many cases, addressing demand-side solutions to encourage more sustainable circular consumption patterns</p>

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		business models.	
5.7		Kraaijenhagen Stage 3: Selecting your pilot	Merge with Kraaijenhagen approach
6.3.3		In Sharing platforms and resources, include space and logistics sharing. E.g. shared containers, storage, shipping and logistics. Often logistics are MASSIVE cost items (and CO2 item) for companies who have physical product.	In Sharing platforms and resources, add "space and logistics sharing. E.g. shared containers, storage, shipping and logistics."
7.5		That increasing knowledge identifies new risks can also be explained in the second paragraph. Only hazardous chemicals need to be regulated. Ingredients used may change in nature during the manufacturing. Not the ingredients used as raw material input but the composition of the product (the substances in it) delivered to the market are important for the risks for a	Adapt the text as follows Chemicals are part of our daily lives and are necessary for the manufacture of any items an organization buys, uses, interacts with and/or sells. Whilst chemicals offer certain benefits and qualities (such as prolonging the life of a particular material) a growing number of chemical ingredients Some substances used in the manufacture of products are identified as being of concern for human health and/or the environment. For chemicals there is a wide range of national and international legislation and safety standards that prohibit or restrict the use of certain chemicals or govern how they are used. A chemical ingredient substance seen as not posing an unacceptable risk today could be identified as such in the future, as our knowledge of their environmental fate and effect increases over time. In fact this happens on a regular basis. Chemical ingredients which are now deemed to be of concern might also be found in items sold before any prohibitions or restrictions came into effect. a) Taking appropriate steps to identify all materials and chemical ingredients substances that are present within products, components or materials [...] b) Requiring suppliers, as far as it is practicable, to fully disclose the presence of

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		circular economy	chemical ingredients in composition of products, components or materials supplied. This would typically be in the form of a safety data sheet, bill of materials (BOM) or similar. c) Establishing processes to prohibit, restrict or phase out those chemical ingredients substances [...]
1		In the current form, without a rewrite to make it more accessible for SMEs, this wide scope seems not met, although it could serve as a basis for more accessible materials such as brochures and trainings	See comment on Framework
2.28		The relation between leasing and circularity is not made clear.	Add NOTE 2: In general, financial leases have a lower effect on circularity than operating leases because the ownership does not remain with the service provider best able to manage the resources. NOTE 3: leasing does not ensure circularity. E.g., operating leases for cars which are transferred from user to user after years of use does not lead to car sharing and has little effect on the resource use.
2.54.3		To be deemed to be renewable resources, products and services need not be able to be sustained, but actually sustained. Wood burnt but not regrown is not renewable.	<i>NOTE To be deemed to be renewable resources, products and services are to be able to be sustained now and in the future for the benefit of the local community, the organization, wider society and the economy.</i>

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0.6		<p>1. The term sustainable is included in the term circular. This is a serious confusion to be clarified in this guide.</p> <p>2. Agree with comment from another organization, that this guide will not be read by or provide guidance to most SMEs.</p>	<p>1. A sustainable circular economy is essentially an outcome of effective resource management.</p> <p>2. Rewrite</p>
4.2.5		<p>1. The wider scope of the value chain and the long term is not mentioned here and important in the context of value optimization</p> <p>2. The term by-products does not cover it, waste streams can become secondary resources</p> <p>3. This terminology "Where waste is really waste" does not belong in a standard. There is an official waste definition in the Waste Framework Directive which should be applied consistently in this context.</p>	<p>1. Add "throughout the value chain and in the long term": Principle: organizations keep all products, components and materials at their highest value and utility at all times, throughout the value chain and in the long term.</p> <p>2. Change sentence into "First, material streams that are seen as waste (whether in production or post-consumption) can become valuable secondary resources or by-products in other applications."</p> <p>3. Rephrase the whole waste section.</p>
5.6		Kraaijenhagen Stage 7: Circular Business Model	Merge with Kraaijenhagen approach

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		innovation	
7.2		The notion is missing that some circular business models are very old and familiar	<p>After "Finance teams should be involved at the earliest stages of the decision-making process when circular economy requirements are being defined." Add: Some circular business models are very old, such as performance based contracting and pay per use (printers, copying machines) or renting with a service contract (gas boilers). Identifying these and similar familiar business models within your organization or industry can provide a good start to think about circularity, by evaluating if they provide useful examples for other parts of your business as well. However, many of the emerging circular business models are still at pilot scale and it can be difficult to get traditional forms of finance, particularly if profitability or track record is yet to be demonstrated.</p>
7.10		Reusable assets are typically written down to zero or have a small scrap value over their economic life in a financial business case: this is true for linear business models	<p>In the linear business cycle, reusable assets are typically written down to zero or have a small scrap value over their economic life in a financial business case.</p>
Frame work for implementing the principles of the circul		Agree with the comment that this draft is probably not very accessible for most SMEs. There is a bias in the Guide is towards larger companies.	Go back to the basics and rewrite it for small as well as large organisations.

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Circular economy in organizations – Guide			
2.25		<p>The end user in CE discussions is referring to the final user of a product or service (e.g. a shared car), in contrast with the suppliers and B2B clients. The end user is not using a component or material, that will be a business supplying the end user. The product or service is not necessarily offered by a market party but may also be offered by a government or public authority. We do not recognize the comment that services do not have end users. E.g., the reader of a virtual news paper rather than a paper one is in our opinion also viewed as an end user.</p>	<p>End user: person or organization that uses a product or service at the end of its value chain.</p>
2.49		<p>Technical debates about the definition of recycling</p>	<p>Add a note: NOTE 3 Technical debates about the definition of recycling and recyclability</p>

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		and recyclability hamper the circular economy	hamper the circular economy; they can be avoided by referring to the actual share of secondary materials in products on the market
0.3		General comment on the whole guide: why pick these specific examples? There are far more examples. This is true for examples of cities and of companies. See also Annex C	Strike all specific examples. Those by name, such as here, and also those that can be easily recognized. To provide inspiration, outside of this standard, consider set up an example database with clear criteria, kept up to date, to add any number of examples.
4.2.3		Add a note on stewardship and CE	<i>NOTE 2 Stewardship is a term from sustainability thinking. It is and remains crucial in a circular economy. A new element of stewardship in the CE is that it also requires organizations to include externalities such as environmental and health impacts into the value chain. As a consequence, the costs associated will be reflected in the prices and margins and become a financial driver for value optimization for both the value chain and society. The driver for responsibility is thus changing from “company charity” and licence to operate to optimizing circular business models.</i>
5.5		In the context of CE, this stage seems rather vague	Merge with Kraaijenhagen approach
6.3.3		Peer-to-peer (P2P) lending is a sharing platform. There are many forms.	Group under Sharing Platforms
Bibliography		Total lack of publications on CE, such as the EMF, Circle Economy, European Commission,	Add relevant literature

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		Kraaijenhagen's Circular Business book, other reports used	
2.23		The term durability is unclear	Add a note: NOTE To drive the transition to a CE, the actual durability in terms of performance should be considered rather than the theoretical ability
2.48		1. Exactly. It would be contradictory to include energy recovery and backfilling in recovery but not in recycling. They are not part of CE. 2. The definition in EN Standard for environmental declaration is more explicit.	1. Adapt the definition of recovery like we indicated to make the definitions consistent. 2. A distinction or a note referring to the Standard definition for environmental declaration could be useful.
0.2		The relation between sustainability and circularity is not made clear in the standard.	Add a paragraph on the relation between sustainability and circularity, including the limited motivational power of the term sustainability, and the power of shifting responsibility to the producer or service provider to achieve sustainability throughout the value chain
4		No, we do not think Figure 9 adequately captures "what systems thinking is all about". 1. The title says "Principles of the circular economy". 2. Innovation is not a principle nor an element of systems thinking. It is a	1. Include instead clear lists of - Principles: Use the 3 principles as formulated by the Ellen MacArthur Foundation (EMF). - Drivers for CE: innovation, resilience etc. - Barriers: 1. Lack of demand 2.Lack of transparency - Government policies boosting CE: circular procurement, price incentives (taks, EPR), ecodesign, sector/chain transition paths 2. Make clear that incorporating the externalities in the pricing over the value chain is a new element of Stewardship in the CE

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		<p>benefit of embracing CE.</p> <p>3. The term “Stewardship” should indeed be included in CE. Not however that the effects of traditional stewardship can surpassed by implementing CE principles by incorporating the externalities in the pricing over the value chain.</p> <p>4. Collaboration is crucial, but is it a principle?</p>	<p>3. Clarify the role of Collaboration in the CE</p>
5.4		<p>Confusing use of "more sustainable and circular"</p>	<p>This should include reflecting on the organization’s value proposition and how it could be changed with respect to transitioning to a more sustainable and circular mode of operation.</p> <p>Correct this in the whole Guide</p>
<p>Frame work for imple menti ng the princi ples of the circul ar</p>		<p>The document feels different from usual standards. It reads more like a story on the subject of the circular economy.</p>	<p>Building on existing standards and literature, try to sharpen definitions and tools as much as possible.</p>

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economy in organizations – Guide			
6.3.3		See comments before and alternative table	Integrate our alternative table with this one
Annex C		There are dozens of case studies, hundreds of circular companies. Why these examples? Why limited? While we recognize the importance of inspiration and are proud to recognize one of our own partner companies in the current shortlist, we recommend striking concrete examples from this Guide, including ones that are made anonymous but still recognizable.	Strike Annex C. Possibly consider setting up (or linking BSI with) an independent international database, outside this Guide , with examples, reviewed and accepted on the basis of clear criteria, limitless in numbers, kept actual. It would make sense to provide small examples from both SMEs and MNCs, as well as a cross industry selection AND a selection which highlights certain factors of CE in play, eg closed loops. Happy to support this from our side.
2.18.2		Unclear. And what is AD? Anaerobic Digestion?	Use the EMF butterfly figure and add sharing and digitization
2.47		1. In the context of the CE, the term “energy recovery” is green washing. This is a fundamental	<i>NOTE 1 Waste used principally as a fuel is not considered to be recovery</i> <i>NOTE 2 Recovery can be divided into three sub-categories: preparing for reuse (e.g. items need to be checked, cleaned or repaired before they can be reused),</i>

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		<p>controversy considering the CE. The CE requires as a boundary condition that energy should be generated using renewable sources such as solar. The correct term is waste incineration. Indeed, the energy generated is useful for society but it is a part of the (linear) economy that needs to be avoided as much as possible in the CE. If the commentators do not agree with each other, we urge striking this definition</p> <p>2/ Like energy recovery, backfilling should be stricken from the term recovery. Like landfilling, it is not part of the circular economy.</p>	<p><i>recycling and other recovery. Other recovery is mainly associated with energy recovery, waste being used as a fuel, and backfilling (i.e. where waste is suitable to be applied in a process of landscape engineering).</i></p>
0.1		<p>Shouldn't the open loop cascading be one of the smallest circles? It refers to the biocycle.</p> <p>The CE is not about managing energy. It supposes the transition to renewable energy sources. Indeed, fossil fuels are resources that are wasted,</p>	<p>Ultimately, the circular economy is about organizations “turning things on their head” and completely rethinking how our economic system can improve the management of resources and energy in order to enhance financial, environmental and social benefits both in the short and long-term.</p>

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		and they are covered by the term “resources” Especially in the long term. Why add “short term”? CE needs investment in innovation before the benefits arrive. This phrase could lead to decisions against CE if it does not lead to short time profit	
3.3		<p>1. Circular public procurement, price incentives (e.g. fiscal measures) for circular products and services, extended producer responsibility and ecodesign are the most important government policy instruments to boost circular business models and deserve explicit mentioning in the rather conventional list in this section (bullet a)</p> <p>2. These policy measures deserve more explicit attention throughout the Guide</p>	<p>1. Adapt the text in bullet a) as such: Minimizing the use of resources in a product should be balanced against functionality and durability requirements to obtain an optimum use of resources over the life cycle. In addition, as governments and the wider public demand improvements in circular public procurement, price incentives (e.g. fiscal measures) for circular products and services, extended producer responsibility, ecodesign, supply chain transparency, stewardship and accountability, expectations around the sourcing of primary and secondary materials is becoming increasingly sophisticated and challenging.</p> <p>2. Also mention these measures to boost the CE elsewhere in the Guide</p>
5.4		Seems at the wrong place. Kraaijenhagen selects	Merge with Kraaijenhagen approach

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		a pilot first, than starts with Sketching the system. CE as a whole is often too broad, you need to focus first	
6.3.3		This is just one grouping. Another one, with more examples of circular business models in connection to the 4 stages of a circular business model, is given here:	<p>Use the following grouping for Circular Business Models:</p> <p>1. VALUE CREATION: Circular design, supply/purchasing and manufacturing Circular design: Maximum long-term value creation and preservation Waste reduction: Waste reduction in the production process Circular sourcing: Only sourcing circular products or materials, preferably local Collaborative production: Cooperation in production chain leading to closing material loops Cradle-to-cradle: Product redesign to 100% closed material loops Produce on order: Only producing when demand is present Customer vote: Making customers vote which product to make Lean: Lean manufacturing in combination with circular principles</p> <p>2. VALUE DELIVERY: Online or local Digitisation: Shifting physical activity to virtual Direct delivery: Direct local delivery, without retail</p> <p>3. VALUE CAPTURE: Optimal use Sharing platforms: Products and services are shared among users Performance based contracting: Long term contracts, responsibility with producer or service provider Product-based services: Services connected to a physical product Pay per use: One time payment to use product or service Subscription based rental: Against a low periodic fee consumers can use a product or service Maintenance: Product life extension by maintenance services Repair: Product life extension by repair services 3D printing: Using 3D printing to produce spare parts Progressive purchase: Pay periodically small amounts before purchase</p> <p>4. VALUE RECOVERY: after use</p>

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			<p>Next life sales: Product gets a next life Take back management: Incentive to ensure product gets back to producer Refurbish, remanufacture & resell: Product gets a next life after adjustments Biomass cascading: Materials are cascaded and reused, recycled or disposed Upcycling: Materials are re-used and its value is upgraded Recycling: Materials are reused and recycled</p>
7.12		<p>Here a reference to quality, environment or even energy management systems standards, continuous improvement tools would be beneficial. Circular economy development can as well benefit from existing methodologies such as product development, systems of management, continuous improvement responsible sourcing, eco-design. It would be misleading to let users think that CE is 100% new, and a new dogma. It builds on and improves existing schemes. No need to reinvent the wheel.</p>	<p>Add a reference to quality, environment or even energy management systems standards, continuous improvement tools</p>
Annex A Evaluating		<p>The list of questions does not provide guidance connected to the 4 value proposition stages of a</p>	<p>Insert a table with the following questions concerning circularity: "Table 1: Questions concerning circularity every actor in the value chain. While the focus depends on the position in the chain, circularity requires every actor in the chain to consider all four stages of the total value proposition for the end</p>

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imple menta tion of the princi ples of the circul ar econo my		circular business model: value creation, delivery, use and recovery.	<p>user."</p> <p>1. VALUE CREATION</p> <p>What materials are embedded in our products and services? What is their exact composition and do they contain substances of very high concern from the REACH list, POP or similar regulation? Where do they come from? How were they manufactured? Are they environmentally sustainable from a life cycle perspective? Were they obtained fairly? Do chain partners claim a fair margin for their added value? Can we redesign our product or service to become more circular? Can we switch to secondary raw materials, non-scarce and/ or sustainable biomaterials? (Where sustainable biomass needs to be further defined, see e.g. http://www.corbey.nl/files/media_base/original/199.pdf and http://www.biomassfutures.eu/public_docs/final_deliverables/WP4/D4.1%20Sustainable%20Bioenergy%20-%20criteria%20and%20indicators.pdf) Which of our suppliers are willing to work with us on circularity?</p> <p>2. VALUE DELIVERY</p> <p>How is the product or service delivered? Can it be delivered more directly, locally, or online?</p> <p>3. VALUE CAPTURE</p> <p>Who is responsible for the resources during the life cycle? What does the contract (e.g. the performance-based contract, lease contract, sales contract) with the client/user for the product or service at hand say about circular aspects? How can the use be optimized? Can the duration of use be prolonged? How can externalities be internalized? In other words how can the cost of environmental, health and other negative effects on society of production, delivery, consumption and waste be included in the pricing mechanism and in the business model - for all partners in? [This question is strongly related to stewardship in the CE] Can more value be captured?</p>

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			<p>Can financial barriers for use be lowered?</p> <p>4. VALUE RECOVERY</p> <p>What happens after use? Are there obstacles for collection, transportation, re-use or recycling?</p> <p>And in the long run?</p> <p>How can the rest value be maximally recovered?</p>
2.10		<p>We agree with the earlier comments and advise to use the EMF definition. Your definition shortcomings: 1. While adequate in content, this is not a definition shared by e.g. the European Commission or e.g. the Dutch government. 2. Circular business models do far more than enabling, they drive sustainability throughout the value chain 3. The definition refers to sustainability, which is exactly what we try to avoid.</p>	<p>Adapt the text as follows:</p> <p>A circular economy is an economy that is restorative and regenerative by design, and aims to keep products, components, and materials at their highest utility and value at all times. The concept distinguishes between technical and biological cycles. It includes a systemic approach to the design of business models driving the management of resources in products and services aimed at long-term multiple value maximization.</p>
0.1		<p>The long term is crucial. This still allows for single-use products as long as they are reused and recycled Sharing platforms are</p>	<p>1. Add sustainable development to this figure 1 as one of the concepts connected to the circular economy.</p> <p>2. Text changes: "The central tenet is to take full advantage of the reusability of materials and products, the restorative capacity of natural resources and to optimize long-term value creation (both directly and indirectly). It is a system</p>

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		<p>probably the MOST effective circular business model to achieve resource efficiency so they cannot be missed in this list</p> <p>Collaborative production is a crucial model to achieve circularity in the redesign, examples in beer production</p> <p>Digitization is a crucial model to achieve circularity by changing from product to service, example Spotify</p> <p>Maintenance is a crucial model to achieve circularity, comes before repair, it is a whole SECTOR that should be stimulated by government policy</p> <p>The transition from products to services is crucial and fails to be mentioned time and time again in this introduction</p> <p>We advise to not mention leasing separately in this context. Many leasing forms are not circular.</p> <p>It is not just in theory that the smaller the loop (activity-wise and geographically) the more</p>	<p>which promotes the sharing, collaborative production, digitization, reuse, maintain, repair, refurbishing, remanufacture and the recycling of materials and products (shown conceptually in Figure 2). Often process and product / service design and innovation (e.g. for repair, recyclability, digitization etc.) are complemented by business model design and innovation using approaches such as leasing or performance-based payment models to manage how products and materials circulate within the system. Most of these models realize this by shifting the ownership of the products and materials from the consumer (by selling) to the service provider or producer best able to perform this management (by pay-per use, renting, leasing, sharing platforms etc.).</p> <p>The smaller the loop (activity-wise and geographically) the more profitable and resource efficient it is likely to be. However a wide range of business risks or consequential impacts need be considered which loop is best for an organization: e.g. sourcing and geopolitical risks, energy usage and costs, environmental and social impacts, complexity, geographic scope, organizational capability, economic viability/return on investment, and so on.</p>

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		<p>profitable and resource efficient it is likely to be. This is true in practice as well. However there are indeed more concerns which together determine which scope produces the most circular end result, and this can indeed be local, national, regional or global; simple or more complex. Clarify this. See proposed change</p>	
2.44		<p>The correct term is pay per use, not for use</p>	<p><i>- result-orientated services which includes outsourcing, pay per use, and performance based contracts where organizations commit to delivering a specific result;</i></p>
3.2.2.1		<p>1. This sections lacks a clear intro sentence concerning what organizations should do in general 2. The section is again forgetting services and the switch from products to services 3. The term service provider is not defined while several service sectors (e.g. transport and tourism) are highly resource intensive</p>	<p>1. Add at the beginning As stated elsewhere in this Guide, circularity requires every organization to consider all four stages of the total value proposition for the end user. All organizations can apply circular economy principles both at the input (e.g. procuring recycled materials or remanufactured components) level. 2. For example, manufacturers have the opportunity to thoroughly rethink the design of their products and services, possibly becoming service providers, while retailers instead need to focus on engaging with their suppliers and communicating about circularity with consumers. 3. Please clarify what is meant by a service provider in the context of CE.</p>

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		service providing industries. Also, in a CE, many businesses become a service provider to better manage resource recovery	
5.2		1. This step coincides with Kraaijenhagen Stage 1 Leadership and 2. Vision and Purpose.	<p>1. Do the detailed mapping to integrating these 2 approaches (Kraaijenhagen and BSI) at BSI, this would lead to too many detailed comments</p> <p>2. Add and adapt the following bullets for "Assess current state of play..."</p> <ul style="list-style-type: none"> • Identify how revenues are generated across the organization, how much of these are generated using circular business models and how much by linear ones <ul style="list-style-type: none"> • Identify how resources are used and/or managed across the organization, key dependencies, key (future) markets and associated risks and opportunities. <p>3. Stakeholder mapping could be rather early placed, more focus possible after pilot selection</p>
5.1		Layout could be improved	Layout could be improved using a real decision tree
6.1		The Guide states correctly that "The exception of course is where an organization's entire value proposition is based on, for example, offering 3D-printing, repair services or reverse logistics (i.e. that is all it does)." Exactly so these ARE examples of business	<p>Clarify the difference between enabling and business models.</p> <p>E.g. Innovation and crowd funding are general activities serving ALL businesses, so are only enabling for CE.</p> <p>Repair and maintenance services, reverse logistics, 3D printing for producing spare parts (and others) are activities serving the CE and with which you can make money, so are circular business models (as long as the full cycle is made circular)</p>

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		models, they are ways you can make money with circular activities. And circular business model innovation is increasingly coming from SMEs, so this definition should be crystal clear,	
Annex A		See our comments on the principles of the CE and the Levels	See comments
2.9		A huge problem for the CE is that incinerator over capacity is attracting waste that could be reused and sell the resulting energy as “green”	Adapt note 4 as follows by inserting the words "including their use as a fertilizer for soils after filtering out any contaminants" <i>NOTE 4 The challenge is to design the optimal cascade in order to minimize resource and energy consumption as well as other impacts. Energy recovery or disposal terminates the cascade as further material use, including their use as a fertilizer for soils after filtering out any contaminants, is not possible.</i>
0.1		Too much emphasis on fear as a driver for the transition to a circular economy. We advise to use the correct language appealing to not only guide organisations and people already motivated by environmental or resource scarcity concerns, but also those motivated by the	After "solving the emerging resource problems", add: "Moreover, it offers the prospect of creating millions of jobs by 2030 [Source: European Commission, 2014] and unlock \$4.5 trillion of economic growth per year [Source: Accenture, Waste to Wealth, 2015]. Especially for companies, it prospects for innovation, cost reduction, new markets, long-term contracts, customer loyalty and feedback, resource resilience, improved chain partner cooperation, employee motivation, and attractiveness for high potential employees including management (see Chapter 3)." Text alternative: "The circular economy refers to a one that is restorative and regenerative by design, and which aims to keep products, components and

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		<p>gigantic economic opportunities. They will bring the acceleration and mainstreaming of CE. We advise to stick to the EMF definition and principles. Your definition is controversial.</p> <p>No, the CE is not referring to the redesign but to the end result after the redesign. We advise to strike the words "sustainable" and "green" from the entire guide, except once or twice to explain the link between sustainability and the circular economy. In our view, the circular economy framework should both include, supersede and boost sustainable development. This also means this standard should build on existing sustainability standards where possible and not reinvent the wheel. No, your phrasing "sustainable economic growth" is highly controversial. While unlocking trillions of \$, the CE is also believed to</p>	<p>materials at their highest utility and value at all times, distinguishing between technical and biological cycles. Simply put, it is about "keeping the atoms into play by systemic approach to the redesigning of business systems, enabling sustainable economic development growth. A circular economy offers an opportunity to reinvent our economy, making it more sustainable and competitive. This will bring benefits for European businesses, industries, and citizens alike (European Commission, 2015). The circular economy provides multiple value creation mechanisms that are decoupled from the consumption of finite resources. It rests on three principles, 1: Preserve and enhance natural capital; 2: Optimize resource yields; 3: Foster system effectiveness (EMF, 2016). A circular economy manages resources more effectively as a result of minimizing resource use by product-service systems redesign, maximizing value during delivery and use, recovering value by closing resource loops and reducing and ultimately eliminating waste flows into the environment."</p> <p>After "accelerate the transition to a circular economy", add: "The term 'circular economy' proves very appealing, because it involves improving the economy. It is about business models that automatically ensure the combination of planet and profit. About creating jobs and achieving sustainability and transparency throughout the value chain while contributing to the people side. Linking economic opportunities to societal problems in a way the previous concepts could not."</p> <p>Delete: "In practice, which loop is best for an organization depends on the particular circumstances".</p>

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		<p>eventually lower the GDP while increasing prosperity using less resources</p> <p>It is not the objective of CE to end waste flows, unless you redefine waste as waste ending up in the environment and rename other waste flows as resources</p> <p>The term sustainable development too is now increasingly replaced by CE since it fails to translate environmental problems into economic opportunities. It is crucial for this guide to make that clear.</p> <p>Concerning the definition of CE: while there are indeed various interpretation of a circular economy, the EMF definition has by far the most support, especially from business, which is needed to realize the transition. We therefore advise to choose the EMF definition</p>	
2.32		A link with the term materials is missing.	Add an explanation of the link with the term materials

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3.1		The benefits for organizations, which are the main drivers for CE, are missing	<p>After "By applying the principles of a circular economy to their processes, companies and other organizations can drive the transition and capture value as well – these are the micro-level benefits."</p> <p>Add: It offers prospects for innovation, cost reduction, new markets, long-term contracts, customer loyalty and feedback, resource resilience, improved chain partner cooperation, employee motivation, and attractiveness for high potential employees including management.</p>
5.1		The approach seems correct but there is already another one, that of Kraaijenhagen, Van Oppen and Bocken, Circular Business: Cooperate and Circulare, 2016, which is specifically suited for implementing CE in companies	<p>a) We suggest to merge this approach with that of Kraaijenhagen, Van Oppen and Bocken, Circular Business: Cooperate and Circulare, 2016, which is specifically suited for implementing CE in companies:</p> <ol style="list-style-type: none"> 1. Leadership 2. Vision and purpose 3. Selecting your pilot 4. Sketching the system 5. Visioning with partners 6. Internal transformation 7. Circular business model innovation 8. Internalising externalities 9. Contract 10. Scaling-up from pilot to circular business <p>b) Change "eight-step process" into "ten-step process" (whole section)</p>
6		Most “enabling mechanisms” are in fact examples of circular business models, in the sense that they are ways you can make money with circular activities. This is	Clarify

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		especially visible for SMEs, smaller companies, because of their position in the supply chain. So the difference between supporting or enabling mechanisms and business models is unclear.	
6.3.3		<p>Table 1 is unclear in several ways and needs clarification concerning</p> <ul style="list-style-type: none"> - the relation between an individual circular business model in this table used and circularity along the cycle - What if it is not yet possible to use a circular business model for all 4 value proposition stages? - What about SMEs using only 1 circular business model as part of a supply chain? 	<p>Add the following text:</p> <p>1. Implementing one of the circular business models from the list in Table 1, in itself does not necessarily or directly lead to a more circular outcome. That will only happen if the entire system is designed and intended from the start to be circular, implementing circular business models for value creation, delivery, use <i>and</i> recovery.</p> <p>For instance:</p> <ul style="list-style-type: none"> - Product modular design in itself only enables reuse but does not mean it will be reused; produce on demand will help improve resource efficiency and stocks but the used products may still lead to lots of waste. - Digitization accounts for the exchange of electronic files instead of physical products. It is a way to improve resource efficiency. It needs to be integrated with the externalities of creating maintaining the IT infrastructure and the inflation of data exchange. - Lease agreement : the definition is incomplete and it is important to know what will happen at the end of the lease contract, will the product be refurbished reused... or will be discarded? There need for an additional condition to make leasing circular and different from a conventional leasing system (that has been existing for decades for products). In the example, what happens after “say a 6-12 months contract”. (The word say is not to be used in a standard) - Bioplastics may be sourced from renewable materials but if they cannot be recycled, they may in fact be less circular than recyclable oil-based plastics. <p>2. Taking one step at a time may be the only way forward. For instance, switch to a bioplastic and at the same time start a serious innovation to develop and</p>

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			<p>implement a recycling loop for that bioplastic. However if the necessary steps towards an integral system redesign are <i>not</i> made, the switch could be close to greenwashing.</p> <p>3. The list includes many established business models such as produce on demand, pay per copy, leasing and recycling. The challenge is to integrate, improve and expand them to create circular business models along the cycle(s).</p> <p>4. SMEs and many other companies, depending on their position in the value chain, often use only 1 circular business model, e.g. 3D-printing, repair services or reverse logistics. These should be accounted for as such, just like for manufacturers, and evaluated on the basis of an integral approach along the value chain.</p>
7.11		<p>Life cycle assessment determines the environmental impacts of products, processes or services, not primarily of the materials.</p> <p>Services can also be resource-intensive.</p>	<p>Organizations should take into account the social, economic and environmental aspects throughout the material product lifecycle and service delivered, covering:</p> <ul style="list-style-type: none"> a) sourcing of materials; b) conversion of materials into products; c) performances of a product over its functional lifetime; d) the usage and impacts of products and materials in services delivered; e) end of life of the product and either the reuse, recycling or disposal of the product; and f) end of life of a material and either the reuse, recycling or disposal of the material.