Will EU Circular Economy Policies Lead Us to Sustainable Development? 
A Viewpoint from an Environmental NGO Perspective

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How Does the EEB Engage in the Policy Debate at EU Level?

The European Environmental Bureau (EEB) is based in Brussels and represents Europe’s largest network of environmental organisations. It brings together around 140 civil society organisations from more than 30 European countries and other non-governmental networks dedicated to sustainability. The EEB was established in 1974 to provide a focal point to monitor and respond to the emerging EU environmental policy. It acts as a communication channel between its members and the EU institutions—the Commission, the European Parliament and Council.

The EEB tackles most pressing environmental problems by agenda-setting, monitoring, advising on and influencing the way the EU deals, e.g. with sustainable development, environmental justice and participatory democracy. It closely coordinates EU-oriented activities with its members at the national level as well as engages in relevant policy processes at international (UN or OECD) level. The circular economy is such a cross-cutting issue that impacts a lot of different policy areas at the same time. Therefore, it forces not only policy-makers but also environmental organisations to think outside their usual silos and connect with their fellows working on such different topics such as mining, energy, chemicals legislation, agriculture, transport, industrial processing, waste, life-cycle assessment or consumer information.

The planet’s natural resources are in everything we consume, from our phones and furniture to our food. However, Europe’s economic model based on continuously increasing levels of production and consumption has become unsustainable. According to the Global Footprint Network, Europeans are eating up on average more than the double amount of resources compared to what nature can provide us with. This is true for mineral resources (such as metals) as well as living goods (such as biomass). What’s more, industrialised countries consume a comparatively high share

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of the world’s resources, leaving a huge environmental footprint in those countries where the exploitation takes place to satisfy their demand. European countries are disproportionately represented among the 20 countries in the world which consume 75% of all materials used globally (Dittrich et al. 2012). Western Europe tops the list of net import regions with a high ecological debt, when the material flows of all biomass, fossil fuels and metals are considered together (Mayer and Haas 2016).

As the rest of the world tries to catch up with European living standards, global demand for natural resources will further increase. Consequently, EU countries must reduce their own resource consumption, limiting it to its fair share of what the planet can provide. But for now, Europe is heavily dependent on importing natural resources, many of which are critical materials for the proper functioning of the economy. Although it published numerous strategy documents on the issue (European Commission 2011), the EU has struggled so far with putting forward concrete actions on improving its resource efficiency and sufficiency.

Despite broad support from a high-level multi-stakeholder platform (European Commission 2014) for a comprehensive EU policy approach towards a resource-efficient and circular economy, the 2014 new President-elect of the European Commission, Jean-Claude Juncker, ignored the need for action in his political priorities. Instead, he emphasised the need to regulate less at EU level and insisted on a principle of political discontinuity, i.e. not pursuing further initiatives of the previous administration. As a prominent first decision of his new cabinet, the proposal for a revised EU waste legislation was withdrawn. Only after huge protest from businesses, NGOs and Member States, the European Commission’s First Vice-President, Frans Timmermans, promised to deliver a new and more ambitious Circular Economy Package by the end of 2015. Finally, a new policy package was released, containing a significantly weakened proposal for the EU waste legislation beyond 2020 and an EU action plan for 2016–2019 with a list of 54 measures (European Commission 2015). This document addresses the main life-cycle phases such as production, consumption and waste management plus some sector-specific issues about biomass and food waste, construction and demolition waste, plastics and critical raw materials as well as additional funding and monitoring.

However, the work of the European Parliament and most of the EU Member States focused mainly on the waste-related aspects of the Circular Economy Package as this was the only legislative proposal tabled by the Commission. At the same time, the policy debate put a lot of emphasis on aspects of product design, circular economy services and new business models, highlighting the economic opportunities of going beyond the usual sell-use-dispose production and consumption pattern. By doing so, an increasing number of stakeholders beyond the waste management sector became actively engaged in the circular economy field. Environmental organisations are committed to mainstreaming this concept across institutions and industries, while at the same time advocating for provisions that ensure that circular economy practices lead to an overall reduction in consumption of natural resources (Fig. 1).
Fig. 1 Building a circular economy in Europe
What Challenges Do We Face in the Circular Economy Policy Debate Today?

Everybody seems to agree with the overarching goal of a circular economy that “*aims at keeping products, components and materials at their highest utility and value at all times*” (Ellen MacArthur Foundation). But the devil lies in the interpretation of how this generic principle translates into the realities of a global market economy and into adequate policy frameworks for different sectors, companies or categories of products and services. Politicians struggle to define what circularity means and how to resolve important trade-offs when promoting aspects such as durability and reparability, recyclability, phasing out of hazardous substances, or increased market uptake of reuse and secondary raw materials.

Nonetheless, the Circular Economy Package is the first serious attempt to align products and waste-related policies at EU level. Existing instruments such as mandatory Ecodesign requirements for energy-related products, Green Public Procurement and Ecolabelling criteria are being investigated how to promote the transition towards greater circularity of goods and services. Associations, e.g. for the furniture and textiles industries have started considering seriously the opportunities and barriers for their business in a more circular economy.

So far, so good. Unfortunately, even these initial policy responses towards the resource-related challenges of our current economic model are contested heavily by some business representatives especially from the electronics sector who want to keep the linear status quo and weaken the regulatory approach towards circular economy. According to their advocates, politicians should not interfere in markets who will find the most resource-efficient solutions by themselves. Different economic actors either expect a competitive advantage or a potential loss of profitability for their business operations in case the legal framework is adapted to a circular economy as the new standard.

The current practices for repair and reuse of electrical and electronic equipment are still very limited, considering the overall annual sales figures for new products in this sector. For a very long time, manufacturers have opposed any attempt regulating design aspects that would allow for longer lifetimes and better utilisation of the precious resources contained in their products at the end of life. Instead, those issues were supposed to be dealt through a distinct legislation on Waste of Electrical and Electronic Equipment (the so-called WEEE Directive). When those rules were to be strengthened in 2012, design requirements for repair and recycling as well as targets on preparation for reuse were blocked again because industry wanted to focus only on the collection and recycling obligations.

Now, as the European regulators try to introduce resource efficiency standards through the EU Ecodesign Directive, the same industry stakeholders prefer to deal with it only at the end of life but not at the design stage before new products are being put on the market. Passing the buck helps those manufacturers avoiding to be regulated effectively on design aspects that would allow for better repair, preparation
of waste products for reuse, recovery of reusable components as spare parts or high-quality decontamination and recycling from complex and mixed material streams. Depending on how this power game between public and private interests will end, we might get at least some minimum requirements through the implementation of the EU Ecodesign Directive that defines market access rules for all companies who want to sell energy-related products in Europe. Such requirements rely mostly on rigorous updates and expansion of industrial standards. Again, device manufacturers are blocking attempts to include strong criteria in electronics standards that would encourage product designs that are easier to repair, easier to upgrade, and easier to disassemble for recycling. A recent report on the US standard developing process shows how industry continuous resistance to establish a consistent set of environmental leadership criteria on repair and reuse rendered the whole system ineffective (Schaffer 2017).

There are many other examples showing that the circular economy has become an important lobby battlefield between more progressive and more conservative business representatives. At the same time, many politicians do not want to talk about transformation of markets, but simply set some basic environmental standards that would allow as many European companies as possible to continue business as usual. Measures to achieve resource savings and to eliminate fees for disposal of residual waste are perfectly in line with a traditional cost-efficiency approach. What makes the circular economic narrative so compelling to policy-makers, business and green NGOs, is its promise to deliver both economic and environmental benefits because the same or even more economic output could be generated with less input of natural resources. Cutting both costs on materials and waste while boosting resource-saving jobs is also attractive for the promotion of societal welfare.

However, increasing resource efficiency does not equate to reducing our overconsumption of natural resources in absolute terms, nor does it address the impact of the continued extraction and use of primary raw materials on the environment. A study led by the renowned Massachusetts Institute of Technology (Magee and Devezas 2017) finds that technological advances alone will not bring about dematerialisation. The researchers also found no evidence of an overall reduction in the world’s consumption of materials. Alone 44% of all materials processed today (i.e. biomass, fossil fuels, waste) are used to provide energy and are thus not available for recycling today. In this situation, more efficiency in one area can even lead to more resource extraction in another area—as is the case when using fossil fuels to melt electronics in order to recover some precious metals like gold.

Promoting greater circularity of today’s production and consumption in Europe alone will probably not be sufficient to substitute the primary raw materials and to reduce significantly our environmental footprint to an extent that allows mankind to stay within planetary boundaries. Analysis of the global material flows shows that currently for only 7% of the global economy’s inputs, the material loop is closed and that strategies recovering its output are limited (Haas et al. 2015). But that is exactly what is currently happening: Mainstream politicians like to see the circular economy as an add-on to green the existing economic model, grasping environmental benefits, creating jobs and capturing economic value in addition to a still linear production
and consumption system. Many companies who already invest into circular economy strategies prefer exploring business model options that carefully avoid the risk of cannibalising profits from their core operations that still depend on ever-increasing global sales figures. Other companies might see the circular economy as a viable opportunity to continuously prosper in already saturated markets such as in Europe while continuing to pursue aggressive growth targets in emerging economies and developing countries.

While there is a growing awareness and understanding of what circularity of products and services should encompass from a technical point of view, the policy debate tends to overlook the role of market effects in the circular economy. Recent research has started to question whether closing material and product loops prevents primary production or could even increase overall production, which can then partially or fully offset the benefits claimed by policies supporting a circular economy (Zink and Geyer 2017). This kind of rebound effect can be explained, e.g. through the limited capacity of secondary materials, components and products to substitute for primary ones, and even more importantly by resulting price effects on markets. In the first case, the supply base will increase as primary and secondary resources complement rather than substitute each other, i.e. by serving different markets or by attracting new buyers in low- or high-end niches. And if circular products and services successfully result in lower prices compared to its substitutes, buyers might simply increase or shift their overall consumption but not decrease it (Fig. 2).

To sum it up, the biggest challenge that we face in the circular economy debate today is to design and implement strategies that effectively reduce the overall input of resources into our economy and aim at utilising the growing stock of things that have already been produced instead of only managing fast-cycling material flows such as packaging for example.

![Fig. 2 Illustration of rebound effects](image-url)
Therefore, adequate policies must be put in place to ensure that efficiency is combined with sufficiency so that circular economy practices will finally replace primary production, and limit the risks of the above-mentioned rebound effects, e.g. by:

- establishing intelligent circularity criteria and ecodesign standards in relevant policy frameworks that encourage companies to progress beyond the legal minimum;
- promoting secondary materials, components and products that can compete with primary alternatives in quality, price, or target market, and
- shifting taxation from labour towards extraction of primary resources, their use or related environmental impacts to compensate for circular economy price effects.

Unfortunately, the current EU Circular Economy Package follows the overarching European policy agenda on growth, jobs, and competitiveness that does not dare to prepare governments, business and civil society for the needed transformation of our economic system towards a globally sustainable development. By mainly promoting more efficient resource use from production and consumption to better waste management, it follows a rather fragmented regulatory approach. The European angle of the circular economy debate also neglects the global impacts of EU policies, e.g. on developing countries. The question would be how to activate and scale up existing tools and combine them with new policies in such a way that they trigger systemic changes (Fig. 3).

Where Will We Be in 2025?

With only five years left until 2025, the future of the circular economy in Europe remains rather speculative at this point of time. On the one hand, there was a high risk for political discontinuity after the elections to the new European Parliament and the establishment of a new EU Commission in 2019. The implementation of the EU Circular Economy Action Plan came to an end by then and the next administration has to relaunch a new set of policies as their priority in times of coping with the economic consequences of the Covid-19 crisis. Only a few EU Member States have started implementation of a complementary and meaningful circular economy strategy at national level. On the other hand, more and more companies are already seizing the economic opportunity and competitive advantages of becoming first adopters of more circular business models. The digitisation will allow even more people than today to explore collaborative ways of consuming less through sharing, repairing, leasing or renting platforms. And some may add that the combination with 3D printing technologies will bring also a fourth industrial revolution to manufacturing industries, allowing for decentralised and customised solutions.

In my opinion, there could be two possible scenarios for 2025 which most likely will further evolve in parallel and maybe lead someday to some sort of coexistence: The corporate circular economy and the open-source-based shared economy.
Fig. 3 Crucial points towards a circular economy (Dr. Willi Haas, Alpen-Adria University, 2016)

(Raworth 2017). The corporate circular economy will definitely be more advanced in 2025 because zero-waste manufacturing practices, selling services instead of products, and recovering own-brand goods for refurbishment and resale can be highly profitable in certain markets. These top-down strategies are seeking to establish control over their used products and related value chains, including the use of patented materials and proprietary technologies. In this scenario, the circular economy will be mainly dominated by large corporations that develop individualised approaches to reclaim and reuse their own parts and materials. In turn, this would lead to high fragmentation within and across industries, thus reducing the potential of a circular economy.

In contrast, an open-source-based shared economy approach addresses those barriers to greater circularity that cannot be overcome by individual companies only implementing solutions within their own factory walls and proprietary boundaries. Innovators, designers, and activists connect with each other worldwide through digital platforms and networking events with the aim of promoting the use of Open Source Circular Economy (OSCE) solutions and methodologies to create a shift to a global sustainable circular economy (as stated in the OSCEdays Mission Statement). By 2025, a global knowledge commons could be built up and accessible to a broad range of companies, networks of regions and cities, civil society initiatives and non-governmental organisations.
In this type of circular economy transparency would be key: defined modularity and open standards would allow for designing components in a common shape and size, easy disassembling and rearranging the things according to the user’s changing needs. Full disclosure of information about composition of parts and materials, their location and options for recovering and reusing them would become available not only to the original manufacturer and their authorised partners but to any service provider including the customer him- or herself. Already today local repair shops, customisation experts and innovative designers start collaborating and sharing their knowledge how to make an open-source-based circular economy work. Unfortunately, both large corporations and even governments are trying to limit the free exchange of information through the internet.

I personally believe we need to strongly support and defend the best of both scenarios. The corporate world can immediately start making their own value chains more circular by changing their business strategy and putting considerable resources into finding appropriate solutions. Frontrunner companies will have a considerable impact on their respective partners, suppliers, customers, markets and sectors. But to make sure that best practices in circularity are the minimum norm and not some vague aspiration for business, governments should set stricter rules for a much more elevated level playing field. In order to complement the corporate circular economy and to move beyond what is going to happen anyway, a strong public policy framework is needed to secure and foster an open-source-based shared economy. Otherwise the overall impact on changing our still dominating linear and unsustainable production and consumption patterns would be limited.

Therefore, dissemination of meaningful circular economy information and practices should become a priority for public policy over protecting proprietary solutions and securing profits to large corporations. Governments need to nurture and protect bottom-up sharing initiatives and innovative start-ups pushing for more inclusive, open-source solutions because they will not prosper if only corporate interests take over the circular economy. Still, both big business and open-source solutions could compete in terms of availability, scope, quality, or convenience if public policy creates fair rules for a level playing field. Finally, all circular economy policies should continuously evaluate their potential to replace primary production and to reduce overall resource consumption including related environmental footprints.

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