

Title

Circular economy (policy interventions)

Short description

Governments and businesses are in the opportunity to make policies that able further progress towards a circular economy. A circular economy seeks to rebuild capital, whether this is financial, manufactured, human, social or natural. This industrial economy promotes greater resource productivity aiming to reduce waste and avoid pollution by design. Eventually, this offers businesses and governments a clear opportunity for long-term growth that is less dependent on cheap materials and energy, and simultaneously restore and regenerate natural capital, which benefits overall health and well-being. This contrasts to a linear economy which has a 'take, make, dispose' model of production. Two types of material flow are relevant for circular economy; biological materials and technical materials. In biological cycles, non-toxic materials are restored into the biosphere while rebuilding natural capital, after being cascaded into different applications. In technical cycles, products, components, and materials are restored into the market at the highest possible quality and for as long as possible, through repair and maintenance, reuse, refurbishment, remanufacture and ultimately recycling.

Topic

Living – Green spaces

Living – Energy efficient housing

Moving – Active mobility

Consuming – food

Characteristics (type, level)

Neighborhood, Local/Regional, National, EU level, Private, Public interventions, Local/Regional, National, EU level policy.

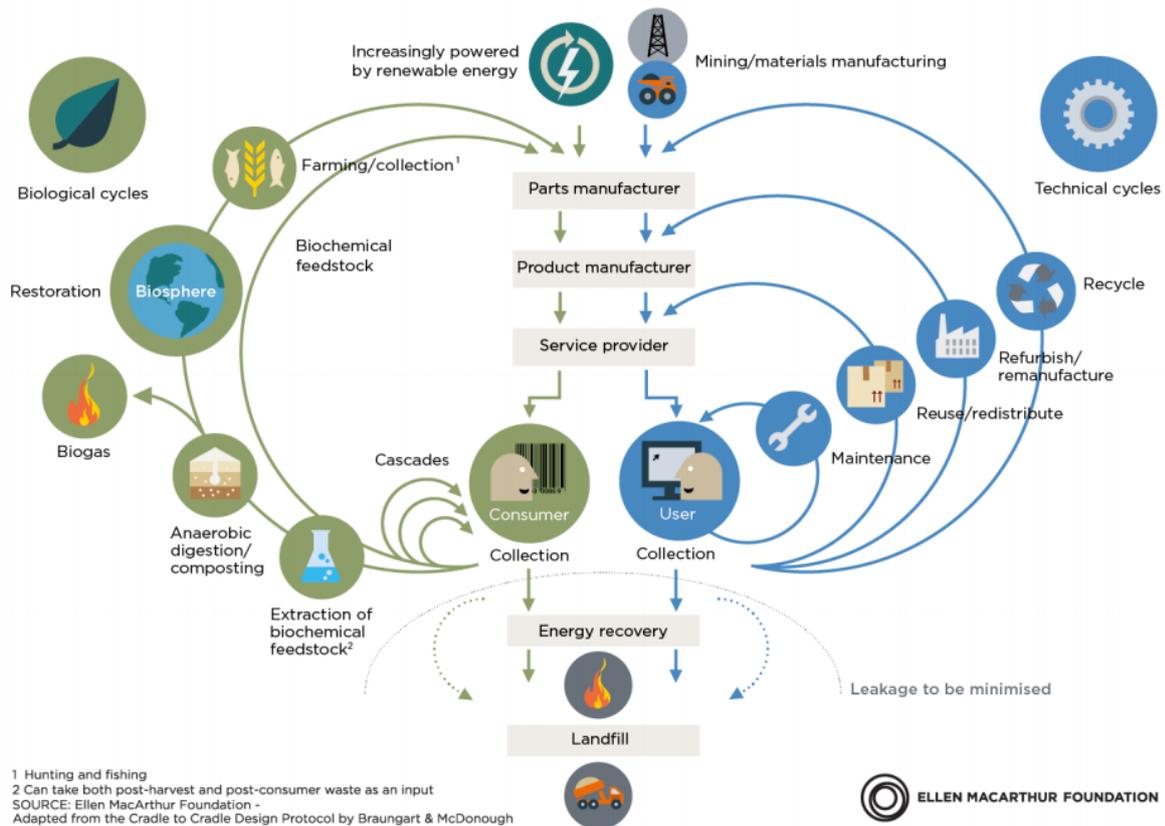
Country/Countries of implementation

In several countries (Sweden, Finland, the Netherlands, Scotland) governments and businesses try to commit to circular economy policies in different ways, but it is still in its infancy.

Aims and Objectives

Governments and businesses are in the opportunity to make policies that able further progress towards a circular economy. A circular economy seeks to rebuild capital, whether this is financial, manufactured, human, social or natural. This industrial economy promotes greater resource productivity aiming to reduce waste and avoid pollution by design. Eventually, this offers businesses and governments a clear opportunity for long-term growth that is less dependent on cheap materials and energy, and simultaneously restore and regenerate natural capital, which benefits overall health and well-being. This contrasts to a linear economy which has a 'take, make, dispose' model of production. Two types of material flow are relevant for the circular economy; biological materials and technical materials. In biological cycles, non-toxic materials are restored into the biosphere while rebuilding natural capital, after being cascaded into different applications. In technical cycles, products, components, and materials are restored into the market at the highest possible quality and

for as long as possible, through repair and maintenance, reuse, refurbishment, remanufacture and ultimately recycling (see figure below).



Target Group

Everyone, but it depends on the target audience of the businesses and policy makers. Businesses and policymakers need to implement the circular economy principles in their practices.

Status

Ongoing.

Start and Completion dates

n/a

Lifestyle and Behavior Change

It could encourage people to become more aware of the products they use and the waste they produce. This includes promoting behavior such as shared assets (e.g. cars, tools), reuse assets or buy second hand, accurate maintenance of assets for prolonged life, separate waste, shift to renewable energy suppliers etc.

Effects on:

<p>Health and Wellbeing</p>	<p>A circular economy approach tackles four global crises; climate crisis, toxicity crisis, raw material scarcity and energy crisis. Changes in these crises indirectly influence people’s health and well-being. For instance, recycling and reuse of materials will make industry less energy intensive than the current system. Using less energy will reduce the pressure on the climate. Furthermore, most of our time we spend indoors, thus we inhale many chemicals from manufactured goods which can deteriorate our health (see the WP2 template on the air purifier for more information). Via circular economy, the ‘cradle to cradle’ may be approach is incorporated which reduces these chemicals.</p>
<p>Vulnerable populations</p>	<p>The positive consequences of a circular economy are not restricted to one population or place but are worldwide. Thus, it also (indirectly) impacts the social economically vulnerable people/groups.</p>
<p>Environment</p>	<p>The ultimate goal of a circular economy is to move to renewable energy, which causes lower carbon emissions and eliminates the use of toxic chemicals. In addition, the recycling and reuse of materials will make the whole industry less energy intensive than the current system and reduce waste.</p>

Initiated and/or implemented by

Several sources between 1960 and 1990 report the finite nature of the Earth and the dependence on its resources as a problem. Big events such as the oil crisis in 1973 emphasised this notion.

Stakeholders and sectors involved

Policy makers and businesses

Financial support

Governments and businesses. Note: circular economy can also function as a profitable business model when implemented correctly.

Evidence-base

The Scientific literature on circular economy:

- Mont O, Heiskanen E. Breaking the stalemate of sustainable consumption with industrial ecology and a circular economy. Handbook of Research on Sustainable Consumption: Edward Elgar Publishing; 2015. p. 33-47.
- Ghisellini, P., Cialani, C., & Ulgiati, S. (2016). A review on circular economy: the expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner Production*, 114, 11-32.
- Su, B., Heshmati, A., Geng, Y., & Yu, X. (2013). A review of the circular economy in China: moving from rhetoric to implementation. *Journal of Cleaner Production*, 42, 215-227.
- Gui-yang, F. J. F. Z., & Qing-xian, G. A. O. (2010). Conceptual Identification and Evaluation Index System for Low Carbon Economy [J]. *China Population, Resources and Environment*, 8, 008.
- Geng, Y., Fu, J., Sarkis, J., & Xue, B. (2012). Towards a national circular economy indicator system in China: an evaluation and critical analysis. *Journal of Cleaner Production*, 23(1), 216-224.
- Haas, W., Krausmann, F., Wiedenhofer, D., & Heinz, M. (2015). How circular is the global economy?: an assessment of material flows, waste production, and recycling in the European union and the world in 2005. *Journal of Industrial Ecology*, 19(5), 765-777.
- European Commission. Circular Economy Strategy 2017 [updated 26-01-2017. Available from: http://ec.europa.eu/environment/circular-economy/index_en.htm.

An overview of multiple case studies about circular economy can be found at

<https://www.ellenmacarthurfoundation.org/case-studies>
<http://www.metabolic.nl/our-work-2/publications/>

Main activities

The Ellen MacArthur Foundation indicated six areas of policy, which can be leveraged to accelerate the transition (see 30: Toolkit for Policy Makers Report)

- Education information and awareness: increasing information and awareness aim to change ingrained patterns in behavior of companies and individuals and close gaps in information that prevents or restricts circular economy opportunities
- Collaboration platforms: such as public-private agreements, R&D clusters and voluntary industry initiatives. Circular economy depends strongly on finding, collaborating and interacting with suitable partners across the same value chain. A platform can reduce the accompanying costs in this process.
- Business support schemes: companies can face economic barriers and market failures when seeking out circular economy opportunities. Policy interventions in this area can take the form of financial support, such as grants and subsidies, and capital injections and financial guarantees, but also importantly technical support, advice, training, demonstration of best practices and development of new business models.
- Public procurement and infrastructure: When businesses face the barrier of entrenched customs and habits or a lack of markets for a circular economy opportunity, the public sector can step in to provide purchasing power. Circular economy standards can be incorporated into procurement law or guidelines, lists of preferred suppliers or materials can be drawn up, and skill in total cost of ownership (TCO) and measures of material circularity can be built in procuring departments. If the barrier is insufficient public infrastructure – such as waste collection systems and treatment facilities – public sector budgets can provide investment that enables private sector circular economy activity.

- Regulatory frameworks: Regulatory policy interventions are of course critical to address regulatory failures and can also address barriers including profitability and split incentives. In cases where circular economy activity is hampered by the unintended consequences of existing regulations, it can be helpful to form a task force on the circular economy or resource efficiency. Where the barrier is that of inadequately defined legal frameworks, new or adapted regulations may be needed. These could come in the form of imposing restrictions on existing activities, lifting existing restrictions or setting a positive legal framework for circular economy activities.
- Fiscal frameworks: the main barriers to circular economy opportunities that fiscal instruments could address are those of profitability for companies and unpriced externalities. Similar to regulations, fiscal instruments can be applied to either discourage non-circular activities on the one hand or explicitly support circular economy opportunities on the other. They can be in the form of, for example, a fiscal instrument applied to products difficult to incorporate into a circular system, such as disposable plastic carrier bags, or pricing more fully the negative externalities of waste (management) through fiscal interventions like landfill and incineration taxes.

Evaluation

This depends on the case, but mostly just cost/benefit analyses.

Main results

Linear consumption is reaching its limits. A circular economy has benefits that are operational as well as strategic, on both micro-5 as macroeconomic level. However, to take this opportunity, policymakers and businesses need to commit.

Key success factors and barriers

Key barriers are the complexity of the process, a lot of (new) knowledge and collaborations are necessary for successful implementation.

More information

The Ellen MacArthur foundation (in collaboration with McKinsey):

- All publications: <https://www.ellenmacarthurfoundation.org/publications>
- Towards the circular economy volume 3:
<https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Towards-the-circular-economy-volume-3.pdf>
- A Toolkit for policy makers:
https://www.ellenmacarthurfoundation.org/assets/downloads/government/EMF_TFPM_FullReportEnhanced_11-9-15.pdf
- Circularity indicators:
https://www.ellenmacarthurfoundation.org/assets/downloads/insight/Circularity-Indicators_Methodology_May2015.pdf
- Metabolic (Dutch):
<http://www.metabolic.nl/>

INHERIT perspective

This policy has been chosen for inclusion because of it has the potential of major impact of sustainability of the environment, in the domains of living, consuming and moving. By



reducing waste & transport and reusing components, it has the potential to deliver a healthier environment and, more widely, to contribute to global environmental sustainability.

Contact

<https://www.ellenmacarthurfoundation.org/>