

Bellagio Declaration

Circular Economy Monitoring Principles

Writing group – draft final version

Update tracking

Session 1 version (21.7.2020): This version included all comments from the summaries of the three webinars in May and June inserted where relevant.
Session 2 version (31.7.2020): All webinar comments have been moved to Annex 2 for reference. They will be removed in the final version. Minor editorial comments discussed in session 1 have been accepted (to have a cleaner looking text). All substantial changes following the discussion in session 1 have been marked with track changes.
Session 3 version (20.8.2020): This version removes all comments that were assessed in session 2 and agreed upon. Mostly this was in the form of no further comments on the comment. Only where significant changes have come as a result of session 2 will the comments be kept in the doc for reference. In a few places square brackets [] have been used to show alternative text. Text after the principles need to be adapted once the principles have been agreed.
Session 4 version (7.9.2020): This version implements the outcome of session 3 and includes two versions of the 8 principles. One is longer and more descriptive, while the second version is shortened to the essentials. The explanatory text is reworked to follow the structure of the principles. It is largely the same text as earlier, but in different order.
Draft final version (17.9.2020): Session 4 led to agreement on the formulation of all principles and the introduction of the explanatory annex.
Draft final version (06.10.2020): Version for technical meeting on 15.10 where comments from DG ENV has been addressed.



Bellagio Declaration

Circular Economy Monitoring Principles

16 October 2020

We, [see Annex 2] the representatives of institutions and authorities, endorse the following principles in the context of measuring and communicating progress towards circularity in the economy, agreed in Bellagio, Italy, on 16 October 2020.

Preamble

- Acknowledging that moving towards a circular economy allows to use natural resources more efficiently and keep resource consumption within the planetary boundaries, while contributing to GHG emissions reduction and limiting the depletion of natural capital and biodiversity loss. Becoming more circular also increases the resilience of an economy by reducing its material imports dependency.
- Recognizing the economic potential linked to innovation and job creation as well as increased competitiveness from a transition to a more Circular Economy;
- Acknowledging that meeting some targets embedded in the UN framework of Sustainable Development Goals (SDG), in particular for SDG 12, requires a circular approach.
- Recognizing the central role of Circular Economy in the European Green Deal and observing that the European Commission Circular Economy Action Plan is a key vehicle for its implementation in the EU. The action plan includes the action on the update of the EU monitoring framework for the Circular Economy;
- Acknowledging that meeting environmental international targets as well as enhanced European targets on biodiversity, health, and climate action is at the heart of the European Green Deal;
- Acknowledging that the European Green Deal underlines that moving towards a Circular Economy should be accompanied by a *just transition*, taking into account the distribution of costs and benefits across the economy, including environmental and social costs, to ensure 'we leave no one behind';
- Acknowledging that implementation of Circular Economy may differ across countries and adapt to local circumstances following the subsidiarity principle. Furthermore, recognizing the role of

countries in monitoring progress towards Circular Economy and possibility to exchange best practices in data collection and indicator development;

- Recognizing the need to involve both sub-state (i.e. regional, local) and non-state actors (e.g. business) in the monitoring of Circular Economy;
- Acknowledging several ongoing related relevant monitoring initiatives at local, regional, national, EU, international (e.g. OECD, UN PACE Partnership in Accelerating Circular Economy) and global level and recognizing the need to ensure appropriate synergies.
- Recognizing that context, scope, priorities, and starting points of circular economy strategies can vary significantly, monitoring principles need to respond to this diversity by being applicable for different purposes. Further tailoring them to a specific purpose of the monitoring would add clarity.
- Acknowledging that monitoring circular economy needs to be simple and effective in view of easily communicating progress to policy makers, citizens and stakeholders.

Principles

A circular economy is an economy where the value of products, materials and resources is maintained in the economy for as long as possible. All outputs from one process is input for another. Thus, a move towards a circular economy entails reducing the intake of virgin materials and reducing the generation of waste.

“A circular economy is instrumental in delivering our ambitious goal of turning Europe into a climate-neutral continent by 2050, in reducing pollution and in halting biodiversity loss, while reinforcing EU’s sustainable competitiveness and industrial base. The circular economy must become beneficial not just for the front-runners but to all citizens and economic players across value chains, throughout Europe and beyond. The EU can play an important role in establishing the circular economy at the core of achieving the Sustainable Development Goals globally.” (Circular Economy Action Plan, 2020)

The transition towards a Circular Economy is thus a process that touches upon all aspects of the economy – both ones internalized directly via prices in the economy, and those that are seen as externalities. As such any monitoring of progress needs to encompass the entire economy, its processes, and its impacts on the surroundings, be that people or nature, here and elsewhere.

The 7 principles of developing a Circular Economy monitoring system

1	<p>The Circular Economy Transition</p> <p>Monitoring the transition to a more circular economy needs to look at actions and processes – public and private - across the economy. This is in order to capture the full extent of changes happening to the material and waste flows, products and product life cycles, business models, and processes, and must also include the impacts of such changes.</p>
2	<p>Four key indicator groups</p> <p>A good monitoring system for the Circular Economy transition should rely on:</p> <ul style="list-style-type: none"> • <i>Material and waste flow indicators</i> to capture macro level changes in the material life cycle. • <i>Environmental footprint indicators</i> to capture the impacts across the full value chain of products and the full life cycle of materials, so that spill-over effects are assessed and planetary boundaries are respected.

	<ul style="list-style-type: none"> • <i>Economic and social impact indicators</i> to capture positive as well as negative implications that may arise during the structural changes of the circular economy transition, to ensure a Just Transition • <i>Policy and process indicators</i> to capture the implementation of specific Circular Economy policy measures and initiatives, in particular for some key sectors. <p>For the monitoring framework to be adaptable to and supportive of policy learning, there is a need to allow for experimentation of new indicators.</p>
3	<p>The indicator selection criteria (RACER¹) A transparent monitoring framework for the Circular Economy transition should apply RACER criteria: Relevant, Accepted, Credible, Easy to monitor, and Robust. There should be room for experimental indicators where all RACER criteria cannot be fulfilled.</p>
4	<p>Exploiting wide range of data and information sources The data underpinning a monitoring framework for the Circular Economy Transition may consist of:</p> <ul style="list-style-type: none"> • <i>Official statistics (European statistics, i.e. produced by the European Statistical System, Other statistics for the EU produced by other Commission services and specialized EU Agencies, and other international organizations)</i> – Exploiting and integrating all existing official information sources. • <i>Policy</i> – Tracking policy developments and implementation. • <i>New data sources</i> – Exploiting new data sources beyond the official statistics, such as modelling of footprint indicators and exploring ‘big data’.
5	<p>Ensure multilevel governance of monitoring The implementation of circular economy must happen at all levels of governance, public as well as private. Therefore, monitoring needs should be done at the same multiple levels. This requires a well-defined monitoring structure, to define the contribution of each actor in the circular transition.</p>
6	<p>Allow for measuring progress towards the target Monitoring Circular Economy should help assessing progress towards targets, thus allowing evaluating if the right policies are in place and well implemented, or corrections or new policies are needed in view of reaching the targets.</p>
7	<p>Ensure visibility, clarity and transparency The dissemination of Circular Economy indicators can contribute to increase widespread social awareness as well as informing policy makers, stakeholders and citizens. Appropriate indicators as well as tools in the form of dashboards, structured indicator sets, etc. and user-friendly and attractive communication tools should therefore be identified. Principles of open data will be followed in the development and dissemination of these indicators.</p>

Commented [PJ1]: **Alternative formulation:**

Allow for target setting

For the monitoring framework for the Circular Economy transition to be policy relevant and operational, policy makers should agree on targets, thus allowing indicators to facilitate assessment if progress is being made in the preferred direction.

¹ https://ec.europa.eu/info/sites/info/files/file_import/better-regulation-toolbox-41_en_0.pdf

Annex 1 - Bellagio Principles background

A Circular Economy (CE) is by definition an economy where there is full recirculation of resources and nothing wasted and where the value of products, materials and resources is maintained in the economy for as long as possible. All outputs from one process is input for another. A move towards CE entails reducing the intake of finite virgin material, designing out waste and pollution, developing systems and infrastructure that enable products and materials recirculation, and sourcing renewable materials in a way that also regenerates natural systems the economy depends on. At a macro level the monitoring can be done simply by looking at material input, waste output and reuse of secondary raw materials. Today this is covered by indicators on material consumption, waste streams, and secondary materials re-entering in the

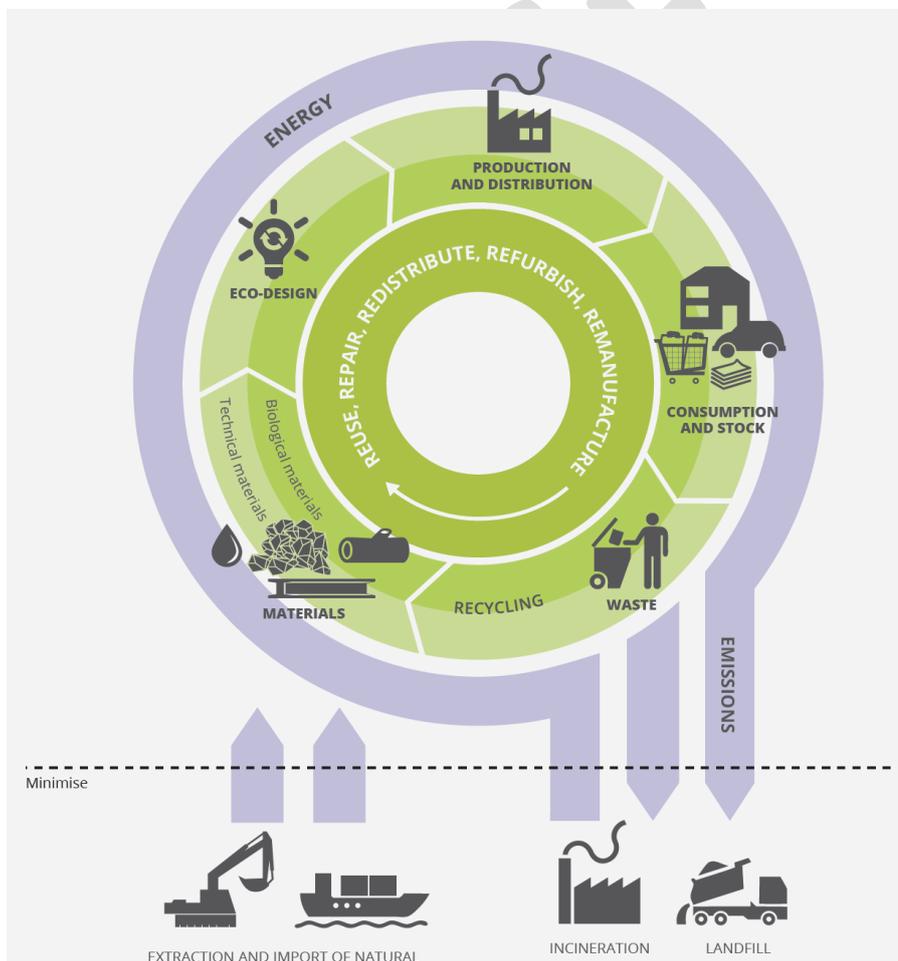


Figure 1 - Circular Economy model (EEA, 2019)

economy, which are reasonably well documented with data flows and modelling outputs but on a high aggregation level only.

In figure 1 this corresponds to the movements across the dotted line. Material flow and waste indicators serve to describe the overall achievement in terms of “closing the loop on material flows”.

Principle 1 – The Circular Economy Transition

Monitoring the transition to a more circular economy needs to look at actions and processes – public and private - across the economy. This is in order to capture the full extent of changes happening to the material and waste flows, products and product life cycles, business models, and processes, and must also include the impacts of such changes.

Such indicators are, however, often highly aggregated, fluctuating with other developments such as general economic development, and are unlikely to accurately describe small incremental changes. They therefore do not fully serve to guide shorter term policy developments. The aggregated nature furthermore means they are biased towards large volume materials, but not necessarily the ones most important for environment or other parameters. There is therefore a need to complement them by looking at the circularity strategies processes within the economy, both at the national level and at business level, to identify changes in push and pull factors that may facilitate changes that are not yet visible at the macro level.

Equally relevant are the environmental impacts generated which should be reduced to close to zero if we are to deliver on the aspiration of the Green Deal. Impacts are generated throughout the lifecycle of materials as they circulate in the economy, both within Europe and beyond. On material extraction, it is vital that while extraction of finite materials is eliminated, the sourcing of renewable materials is done in a way which does not have a negative environmental impact. At the least this means sourcing below renewal rate, but recognizing that most natural systems that support the economy are not in an ideal state (e.g., due to soil depletion in intensive agricultural systems), we need to strive to regenerate these natural systems in terms of for example soil health and biodiversity. In order to properly monitor if circular economy actions actually reduce these impacts, the related pressures and impacts need to be monitored.

Waste and by-products that are to enter into recycling or other similar processes, need to maintain a quality that allows the reuse to take place. Thus, aspects of embedded hazardous substances in secondary material streams that could prevent such recycling needs to be monitored

In a globalized economy, measuring environmental impacts need to address all steps of the life cycle of products and materials, therefore footprint-type indicators are most suitable to monitor progress on the objectives of the circular economy. These will help assessing that environmental impacts are within the planetary boundaries.

A further aspect is the *just transition* aim of the European Green Deal. Circular Economy is beneficial in many aspects. However, becoming circular and resource efficient will have distributional consequences and

may pose challenges in the social and economic domains. In this regard it is important to study the dynamics and acknowledge positive as well as negative socio-economic implications that may arise during the structural changes of the CE transition, in order to highlight how additional policies and reforms may reduce possible negative socio-economic impacts and increase inequalities, to ensure no one is left behind. It is important to ensure the consistency with other indicators used in other environmental and cross-cutting policies.

Circularity strategies within the production chain, in order of priority

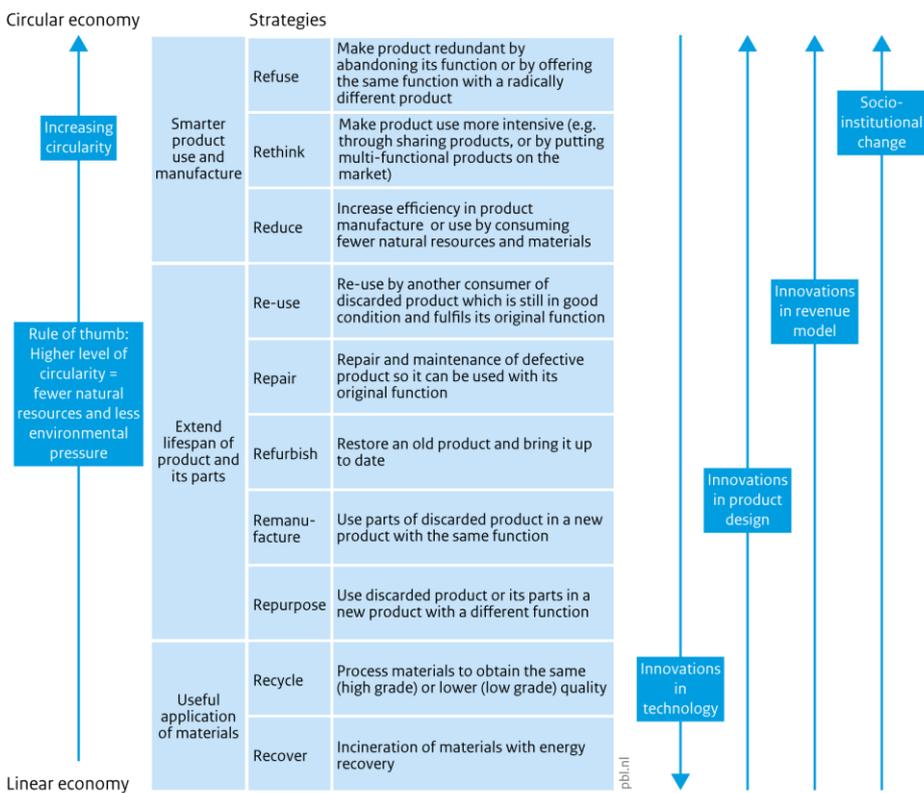


Figure 2 - Overview of 10 Circular Economy strategies (EEA, 2019)

Figure 2 showing an overview of 10 strategies include, for example, reuse, repair, refurbishment, redistribution, remanufacturing and recycling. While the list is already long it is far from being complete. As an example, other proposed processes for the R-list includes processes such as *Remove*, where for example the use of carbon capture can be used to mitigate some of the environmental impacts of the present linear model. Also *Regenerate* in terms of regenerative agriculture has been suggested as a further element.

Seeing the transition from linear to circular as a continuum means that a very large number of such processes can play a role.

In general, the 'inner circles' (see figure 1) have the highest potential to contribute to the aims of the circular economy. The use of process indicators can illustrate how policy action is transferred into market actions at a time where visible results in the material flows are unlikely to be present.

Other policies contributing to circular economy relates to aspects like education (e.g. from primary school to University), training, voluntary work (repair café,...) linking with other SDGs. At the same time becoming more circular can decrease the pressure on critical raw materials in Less Developed Countries in particular some countries in Africa where conflicts are often linked to access to resources (water, land, forest and materials) becoming more scarce, while demand is increasing.

Principle 2 - Four key indicator groups

A good monitoring system for the Circular Economy transition should rely on:

- *Material and waste flow indicators* to capture macro level changes in the material life cycle.
- *Environmental footprint indicators* to capture the impacts across the full value chain of products and the full life cycle of materials, so that spill-over effects are assessed, and planetary boundaries are respected.
- *Economic and social impact indicators* to capture positive as well as negative implications that may arise during the structural changes of the circular economy transition, to ensure a Just Transition
- *Policy and process indicators* to capture the implementation of specific Circular Economy policy measures and initiatives, in particular for some key sectors.

For the monitoring framework to be adaptable to and supportive of policy learning, there is a need to allow for experimentation of new indicators.

It is difficult to monitor circular economy by using only one indicator as monitoring must cover different aspects: the material flows, the policies and processes and finally the environmental impacts. Therefore, it is better to adopt a set of indicators, following the RACER criteria (Relevant, Accepted, Credible, Easy to monitor, and Robust)

Principle 3 - The indicator selection criteria (RACER)

A transparent monitoring framework for the Circular Economy transition should apply RACER criteria: Relevant, Accepted, Credible, Easy to monitor, and Robust.

There should be room for experimental indicators where all RACER criteria cannot be fulfilled.

In order to capture the full scope of Circular Economy, a monitoring system needs to capture:

- The scale and effects of material flows and policy actions across the entire economic cycle including actions of the finance sector and other related services linked to product and services flows;
- The effects along the full life cycle for material, products, and services;
- The effects as they evolve over time;
- The effect at both global, national, and sub-national level in a manner that allows for comparison;
- The environmental pressure and impacts, including impacts outside Europe's borders, to respect the planetary boundaries;

The impact across all pillars of sustainability, thus including health/social impacts, to ensure a just transition. The aim of these principles is to make sure that all key processes are captured as well as to avoid any rebound effects and outsourcing of impact creating processes.

Monitoring tools should furthermore be developed to measure environmental crime especially in the field of illegal waste exports to improve strengthen controls of shipments of waste, promoting the use of digital technologies for tracking and tracing, such as digital passports, tagging and watermarks.

Concrete actions in monitoring depend on data availability, and principles needs to take as a point of departure existing data, confidentiality issues and issues. There is also a call not to increase the administrative burden, and lack of resources to initiative new data collections. At the same time, it is important to identify data gaps and prioritize new data collection now to build new indicators in the future...

Transparency concerns dictates that monitoring should, as far as possible be based on open official statistics. This entails exploiting and integrating all existing official information sources in the short term but also further development of new data sources for monitoring missing aspects of the circular economy in the medium and long term. Official statistics give a reasonable coverage of issues of primary and secondary material and waste flows, but much less around the implementation of specific circular economy policies. As an example it would be suitable to start reporting official statistics on reuse, as this is a key CE action to prolong the life of products and materials.

In view of collecting missing knowledge, it is important to also consider other tools, such as the Eurobarometer surveys, policy implementation tracking, and exploit new data sources based on 'big data'

Principle 4 - Exploiting wide range of data and information sources

The data underpinning a monitoring framework for the Circular Economy Transition may consist of:

- *Official statistics (European statistics, i.e. produced by the European Statistical System, Other statistics for the EU produced by other Commission services and specialized EU Agencies, and other international organizations)* – Exploiting and integrating all existing official information sources.
- *Policy* – Tracking policy developments and implementation.
- *New data sources* – Exploiting new data sources beyond the official statistics, such as modelling of footprint indicators and exploring 'big data'.

where datasets based on elements such as e-trade, carsharing market shares, etc. are used to provide proxies for some of the elements poorly covered by existing data.

Following the principle 2 of using all indicator groups would allow to fully understand the transition process.

Macro level monitoring is clearly the responsibility of governments and international institutions. On the other hand, micro level monitoring such as business or product level monitoring can only be carried with solid business insight, and as such would generally fall to companies. Product level do however, run the risk of missing interactions across the economy and across geographical levels, i.e. international, national, regional and municipal settings. There is therefore a need for a commonly agreed framework that sub-state, sector or product monitoring can make reference to. Such an interface should be formed by commonly agreed definitions and shared access to transparently generated information. This adds up to a shared conceptual model for Circular Economy.

The collaborative interface should be approached as follows:

- **Public administration** - Ensure homogeneous monitoring of public administration actions to stimulate markets through, e.g., sustainable public procurement and to prevent waste generation.
- **Businesses and citizens** - Long-term involvement of businesses and citizens and supporting them in developing and practicing sustainable forms of production and consumption.

Principle 5 - Ensure multilevel governance of monitoring

The implementation of circular economy must happen at all levels of governance, public as well as private. Therefore, monitoring needs should be done at the same multiple levels. This requires a well-defined monitoring structure, to define the contribution of each actor in the circular transition.

The identification of indicators should also consider possible existing targets and specific objectives, so that they can be used to monitor progress. Such indicators allow evaluating if the right policies are in place and well implemented, or corrections or new policies are needed in view of reaching the targets. A good knowledge of environmental problems supports setting ambitious and realistic targets. At the same time, targets can trigger the development and use of existing and new indicators.

Principle 6 - Allow for measuring progress towards the target

Monitoring Circular Economy should help assessing progress towards targets, thus allowing evaluating if the right policies are in place and well implemented, or corrections or new policies are needed in view of reaching the targets.

The purpose of the monitoring is in the end to assess progress towards the Circular Economy transition and influence policy making. It is important to communicate the monitoring tools to policy makers, stakeholders and civil society, and using user-friendly communication tools on the related indicator sets, such as interactive website, infographics, etc.

The good communication and dissemination of circular economy monitoring can contribute to increase widespread social awareness and engagement of all actors: citizens, civil society, business, media, public administrators and policy makers.

Principle 7 - Ensure visibility, clarity and transparency

The dissemination of Circular Economy indicators can contribute to increase widespread social awareness as well as informing policy makers, stakeholders and citizens. Appropriate indicators as well as tools in the form of dashboards, structured indicator sets, etc. should therefore be identified.]

Principles of open data will be followed in the development and dissemination of these indicators.

Annex 2 – Participants in Bellagio Process

To be completed