

# Bellagio Declaration

## Circular Economy Monitoring Principles

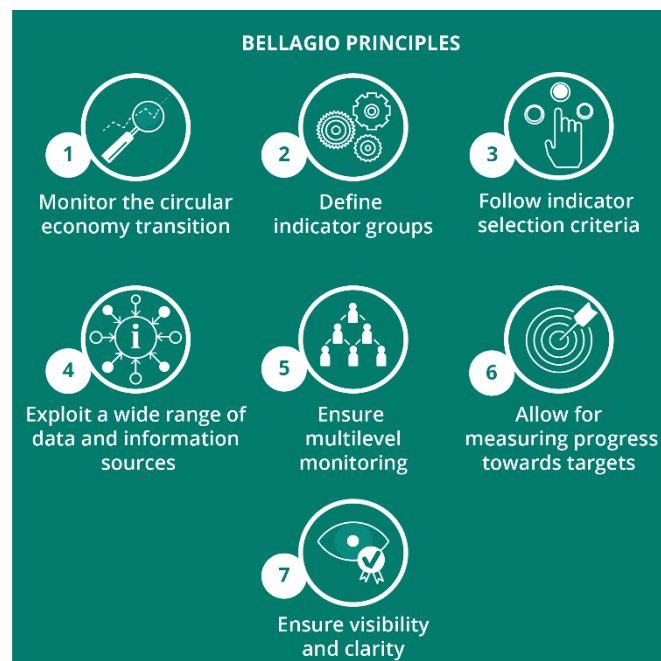
### Abstract

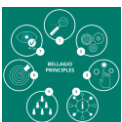
The “Bellagio Declaration” is a set of principles on how to ensure that a monitoring of the transition to a circular economy captures all relevant aspects and involve all relevant parties. It serves to guide national and European authorities in the development of monitoring frameworks and indicators.

The “Heads of EPA Network” is invited to discuss and endorse these principles as a common approach to development and strengthening of monitoring frameworks.

The work was started as a collaboration between ISPRA from Italy and EEA and guided by an advisory group encompassing EPA representatives from Finland, Ireland, Netherlands, Portugal and Slovakia. Originally the intention was to establish a declaration via an intensive expert work session and a high-level meeting taking place in Bellagio, Italy (hence the name). Due to Covid-19 the process was moved online and replaced by a series of webinars and work of a smaller writing group (ISPRA, EEA and the advisory group), ending with a technical meeting to finalize the declaration. Throughout the process European institutions (ENV, ESTAT, JRC) has been consulted to ensure alignment with the work on the implementation of the European Green Deal and in particular the Circular Economy Action Plan

The Bellagio Principles is a set of seven principles capturing the essential elements of a monitoring framework for the transition to a Circular Economy:





# Bellagio Declaration

## Circular Economy Monitoring Principles

### 4 December 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.

#### 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;



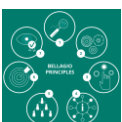
- Acknowledging several ongoing related relevant monitoring initiatives at local, regional, national, EU, international (e.g. OECD, UN PACE Partnership in Accelerating Circular Economy) and global level and recognizing the need to ensure appropriate synergies.
- Recognizing that context, scope, priorities, 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.



## Seven principles for monitoring the transition to a Circular Economy



### Monitor the Circular Economy Transition

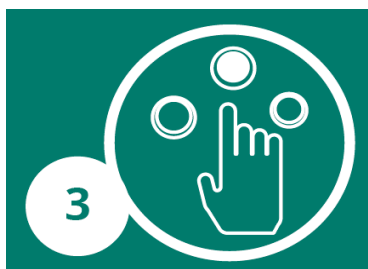
Monitoring the transition towards a circular economy needs to holistically consider all relevant initiatives – public and private - across the economy. It should capture the full extent of changes happening to the material and waste flows, products over their life cycles, business models, and consumer behaviour, including the economic, environmental and social dimensions of these changes.



### Define indicator groups

A robust monitoring system for the Circular Economy transition should include:

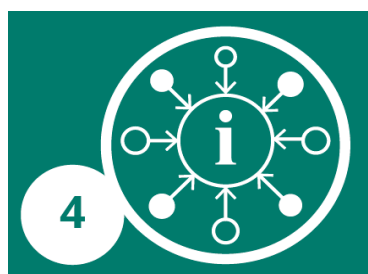
- *Material and waste flow indicators* to monitor changes throughout the material life cycle including resource efficiency dimensions.
- *Environmental footprint indicators* to capture the impacts across the full life cycle of products and materials, so that spill-over effects are assessed, and planetary boundaries are respected.
- *Economic and social impact indicators* to capture positive as well as negative impacts that may occur during the structural changes of the circular economy transition.
- *Policy, process, and behaviour indicators* to capture the implementation of specific Circular Economy policy measures and initiatives, in particular for key sectors.



### Follow indicator selection criteria (RACER)

Indicators included in a transparent monitoring framework for the Circular Economy transition should follow RACER criteria: Relevant, Accepted, Credible, Easy to monitor, and Robust.

However, development of innovative, experimental indicators should also be encouraged, even if not all RACER criteria may initially be fulfilled.



### Exploit a wide range of data and information sources

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

- *Official statistics from the European Statistical System or National Statistical Offices, other data produced by EU institutions, national or local authorities, as well as from international organisations) – Exploiting and integrating official information sources.*
- *Policy information – Tracking policy developments and implementation including qualitative assessments.*
- *New data sources – Exploiting new information sources beyond official statistics, such as data from the private sector and trade associations, research models, or from new applications of digital technologies.*





### Ensure multilevel monitoring

Monitoring should capture changes happening across all levels of the economy. It should address both public and private sector stakeholders, and different governance levels from global to local scale. A well-defined monitoring and governance structure is required to promote the development of coherent metrics that capture the multiple dimensions of the circular economy transition.



### Allow for measuring progress towards targets

Monitoring Circular Economy implementation should help assess progress to relevant policy targets and objectives, thus helping inform if the right policies are in place and well implemented, or if corrections or new policies are needed.



### Ensure visibility and clarity

A well-designed Circular Economy monitoring framework will inform policy makers, stakeholders and citizens. Appropriate indicators as well as user friendly methods of communication, such as dashboards, should therefore be identified.

Where possible, open data principles should be followed, with data being made fully and freely available.

## 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

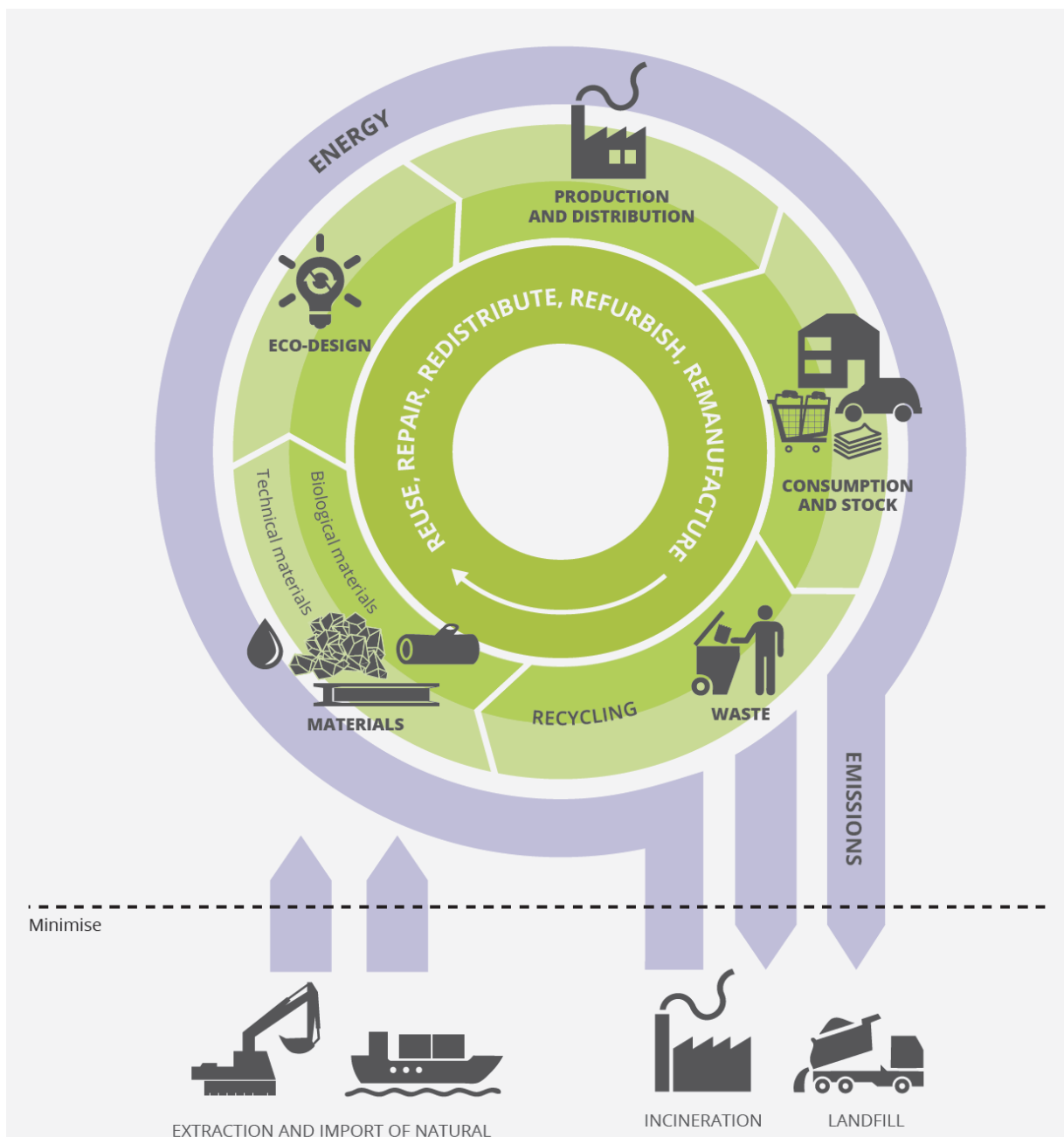
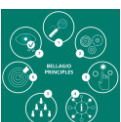


Figure 1 - Circular Economy model (EEA, 2019)



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 – Monitor the Circular Economy Transition

Monitoring the transition towards a circular economy needs to holistically consider all relevant initiatives – public and private - across the economy. It should capture the full extent of changes happening to the material and waste flows, products over their life cycles, business models, and consumer behaviour, including the economic, environmental and social dimensions of these 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**

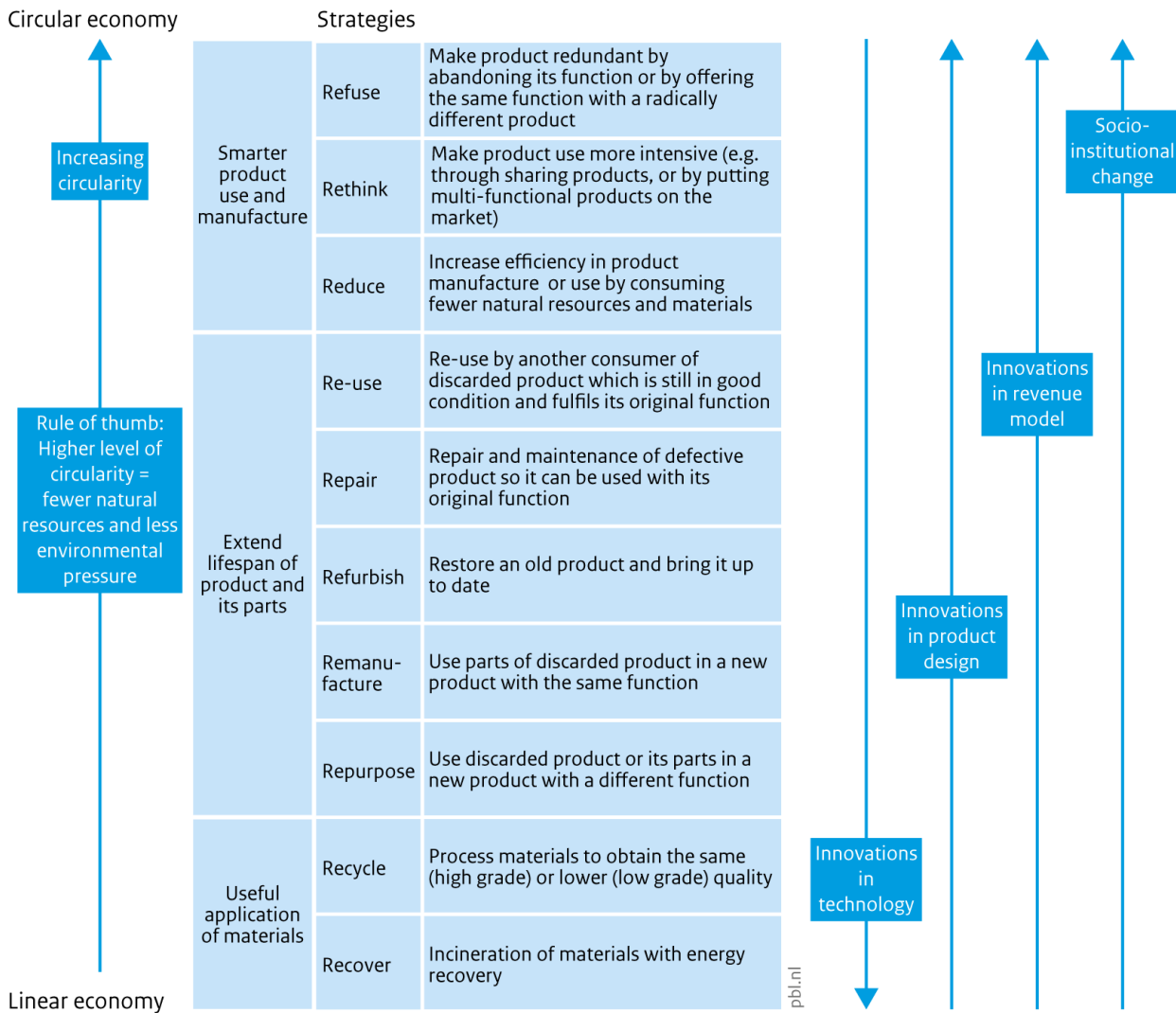


Figure 2 - Overview of 10 Circular Economy strategies (EEA, 2019)

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, etc) 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 - Define indicator groups

A robust monitoring system for the Circular Economy transition should include:

- *Material and waste flow indicators* to monitor changes throughout the material life cycle including resource efficiency dimensions.
- *Environmental footprint indicators* to capture the impacts across the full life cycle of products and 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 impacts that may occur during the structural changes of the circular economy transition.
- *Policy, process, and behaviour indicators* to capture the implementation of specific Circular Economy policy measures and initiatives, in particular for key sectors.

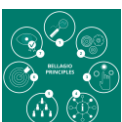
It is difficult to monitor circular economy by using only one indicator as monitoring must cover different aspects: the material flows, the policies and processes and finally the environmental impacts. Therefore, it is better to adopt a set of indicators, following the RACER criteria (Relevant, Accepted,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

### Principle 3 - Follow indicator selection criteria (RACER)

Indicators included in a transparent monitoring framework for the Circular Economy transition should follow RACER criteria: Relevant, Accepted, Credible, Easy to monitor, and Robust.

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.

#### **Principle 4 - Exploit a wide range of data and information sources**

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

- *Official statistics from the European Statistical System or National Statistical Offices, other data produced by EU institutions, national or local authorities, as well as from international organisations)* – Exploiting and integrating official information sources.
- *Policy information* – Tracking policy developments and implementation including qualitative assessments.
- *New data sources* – Exploiting new information sources beyond official statistics, such as data from the private sector and trade associations, research models, or from new applications of digital technologies.

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' 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 monitoring**

Monitoring should capture changes happening across all levels of the economy. It should address both public and private sector stakeholders, and different governance levels from global to local scale. A well-defined monitoring and governance structure is required to promote the development of coherent metrics that capture the multiple dimensions of the circular economy 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 targets**

Monitoring Circular Economy implementation should help assess progress to relevant policy targets and objectives, thus helping inform if the right policies are in place and well implemented, or if corrections or new policies are needed.

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 and clarity**

A well-designed Circular Economy monitoring framework will inform policy makers, stakeholders and citizens. Appropriate indicators as well as user friendly methods of communication, such as dashboards, should therefore be identified.

Where possible, open data principles should be followed, with data being made fully and freely available.



## Annex 2 – Participants in Bellagio Process

The Bellagio Process was formally convened by:

- Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA, [www.isprambiente.gov.it](http://www.isprambiente.gov.it))
- European Environment Agency (EEA, [www.eea.europa.eu](http://www.eea.europa.eu))

Under mandate from the network of heads of EPAs in Europe ([www.epanet.eea.europa.eu](http://www.epanet.eea.europa.eu))

Following a presentation to the epanet meeting on 4 December 2020 of the enclosed version of the declaration it was formally endorsed by:

- Germany
- France
- Slovakia
- Switzerland
- Netherlands
- Austria
- Italy

