# Investments on circular economy monitoring at the European Environment Agency:

## Innovation and complementarity with established monitoring frameworks

Daniel Montalvo | Working Group on Environmental Monitoring and Assessment | 11-12 April 2022

Photo by Alexander Schimmeck on Unsplash

# Circular Economy – key features in Europe

EU material footprint down/stable

More waste
Better handled

Far from circular
Downcycling prevails

Still not enough retention of value

Lack of targets

Not all the same
High demand, high footprint

Externalities
Other barriers

Deficient monitoring

Source: **EEA, digest of the SOER 2020 messages on resource use and waste**

# Circular Economy monitoring is a key activity across many institutions

# Many efforts at different levels

## Monitoring progress towards a resource efficient and circular economy

### What needs to be measured?

operational / aspirational

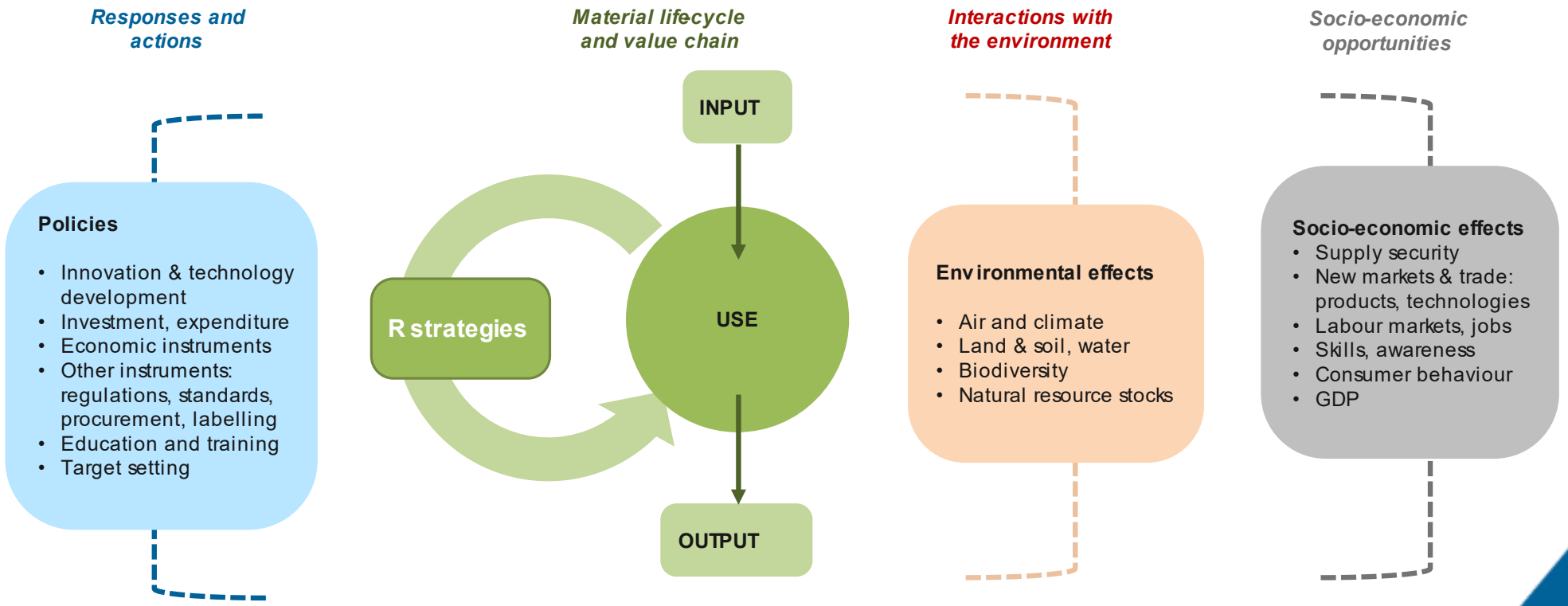




**Illustration of OECD monitoring efforts on Circular Economy**

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# Many efforts at different levels

ICS

# ISO/WD 59004

## Circular economy — Framework and principles for implementation

### GENERAL INFORMATION

**Status :** Under development

**Edition :** 1

**Technical Committee :** ISO/TC 323 Circular economy

**ISO efforts on the matter of circular economy monitoring**

# Many efforts at different levels


**European Circular Economy Monitoring Framework**

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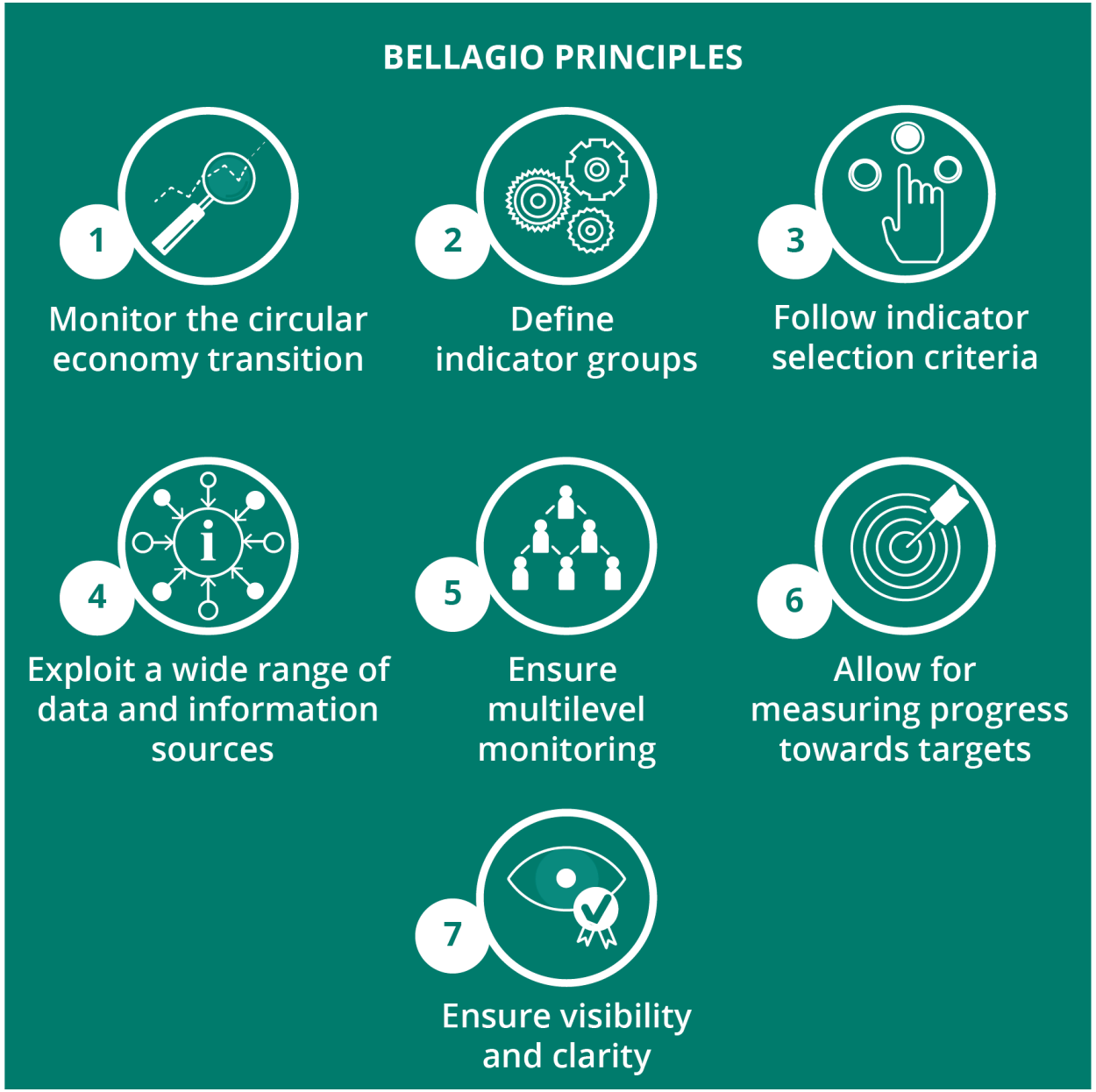
# The Bellagio process



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# Where do we need to know more?

Sustainable sourcing

Eco-design uptake

Clean material cycles

Embedded impacts

Business and social innovations

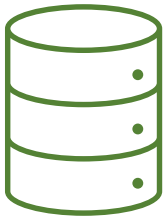
Policies and their effectiveness

Value retention strategies

Waste prevention

# Being complementary and innovative

# How can we know more?



How do we operate in an area where only certain data streams are consolidated?

Can we innovate without locking us into a monitoring role that is expensive to maintain?

Can we use our network to produce information in alternative ways to data flows?

# Strategic orientation for the work on monitoring


## SO2 Providing timely input to solutions for sustainability challenges

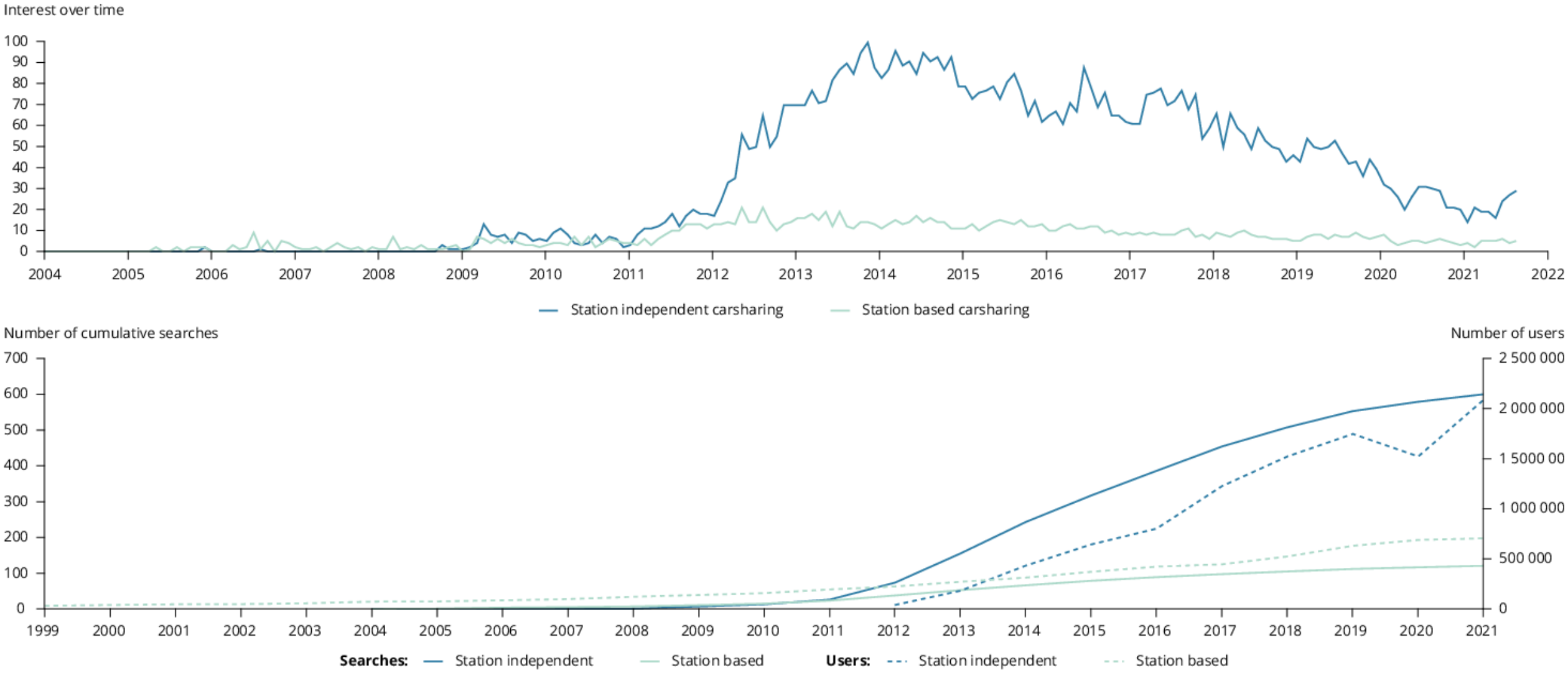
Deliver targeted inputs to inform policy and public discussions, by organising and communicating knowledge on responses, including innovative solutions to societal challenges.

## SO4 Making full use of the potential of data, technology and digitalisation

Embrace digitalisation, including new technologies, big data, artificial intelligence and earth observation that will complement and potentially replace established information sources to better support decision making.

# Potential avenues to build signals/indicators

## Interest parameter derived from search terms in popular search engines



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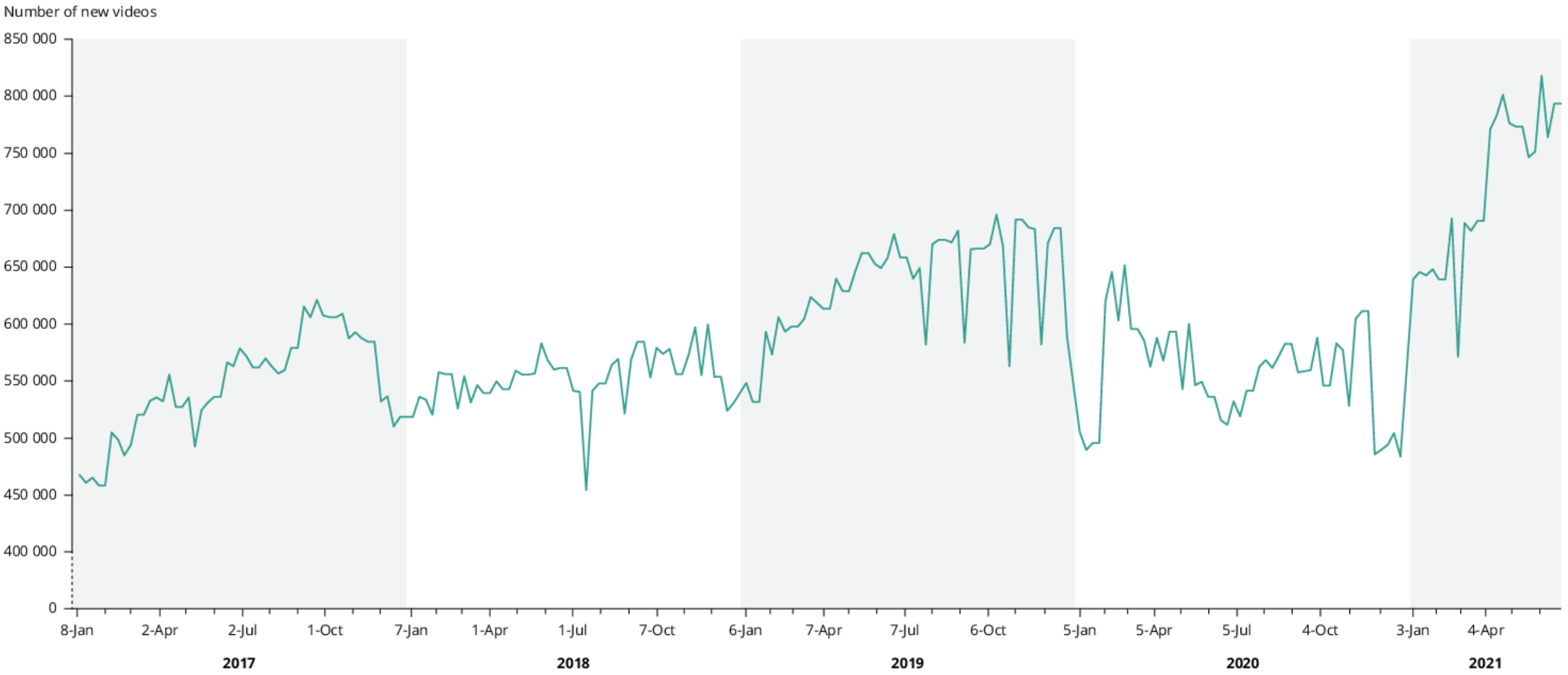
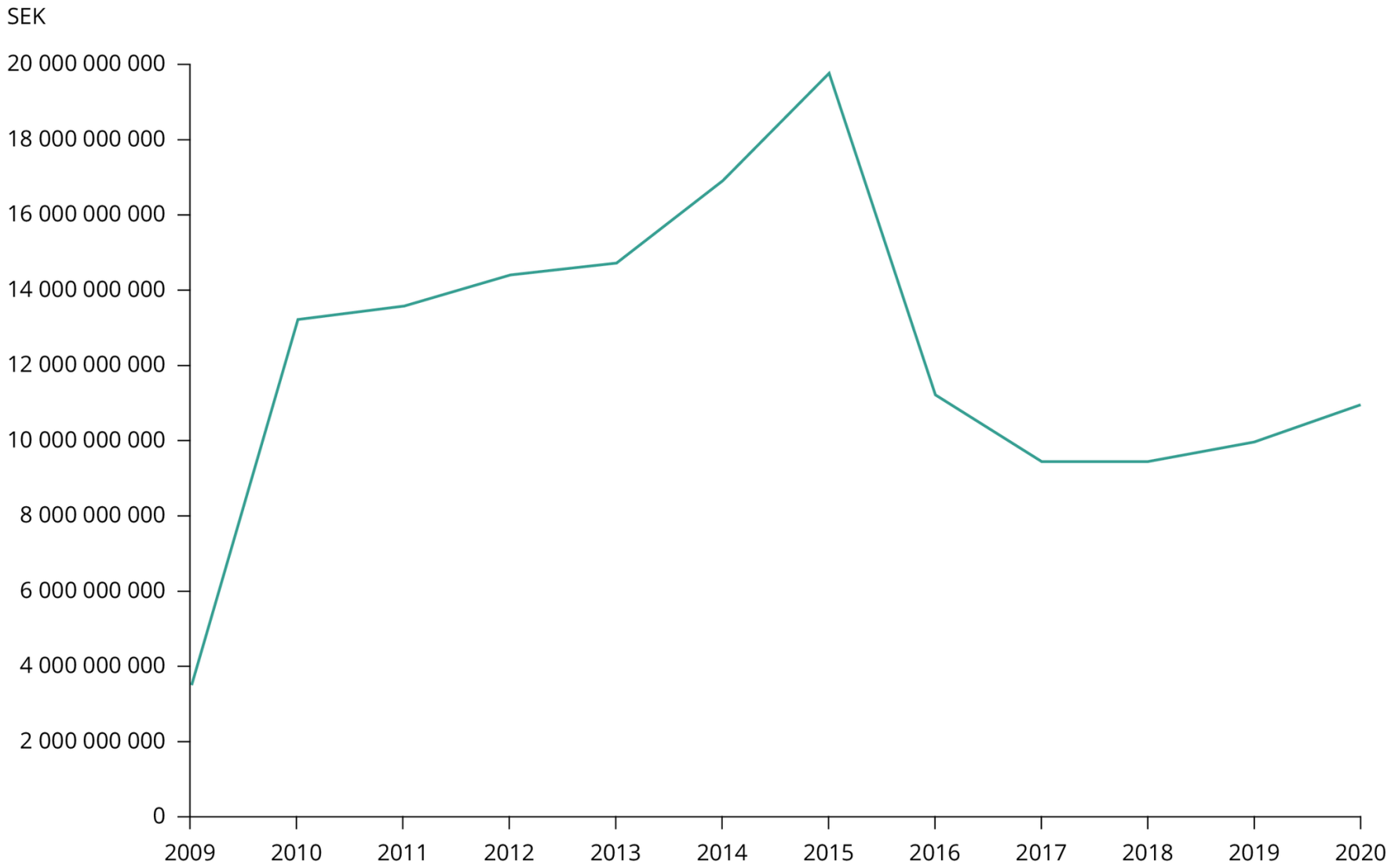
# Potential avenues to build signals/indicators

## Interest parameter derived from upload of videos about a CE relevant topic



# Potential avenues to build signals/indicators

## Tax deductions from a repair scheme established in Sweden



# Potential avenues to build signals/indicators

## Exploiting browser fingerprints to derive IoT product life-spans

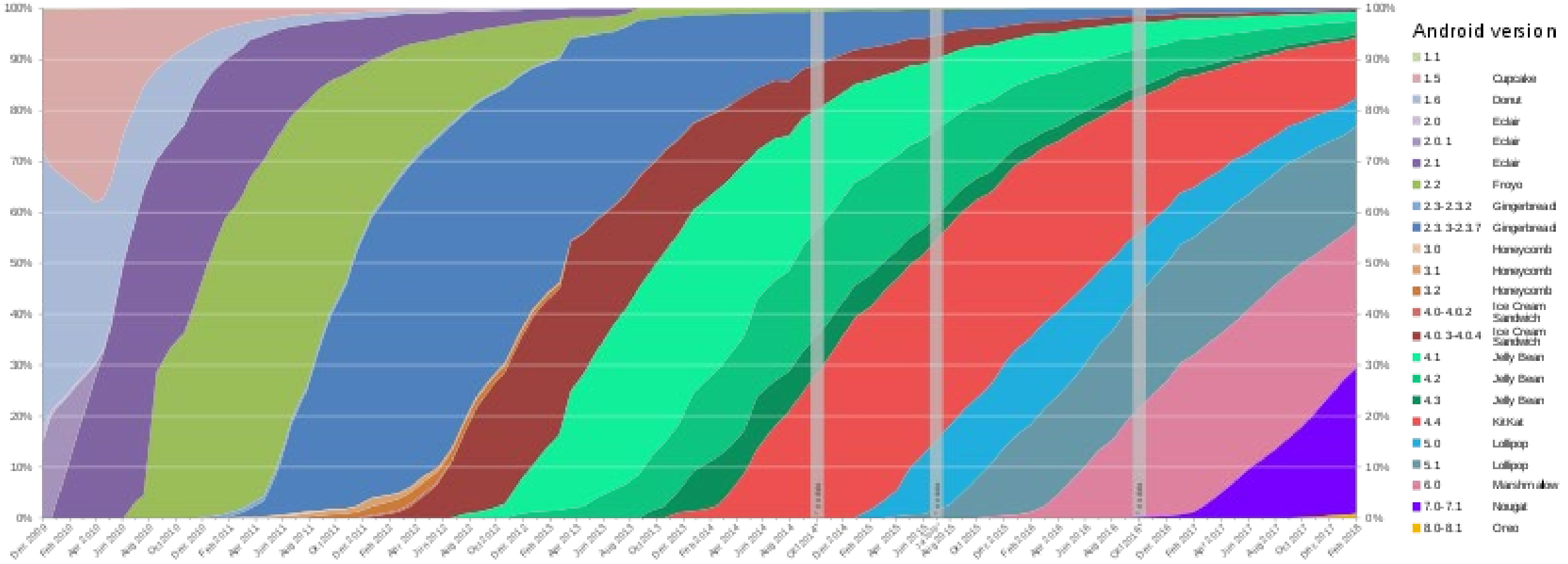



**Figure for illustration purposes: Android version history distribution, based on Android Developer Dashboard – Platform Distribution, graph rendered by Erikrespo, Wikimedia Commons (https://commons.wikimedia.org/wiki/File:Android_historical_version_distribution_-_vector.svg)**

# Pilot 1: Digital product passports as a data source for circular economy policy questions

# Nature of the exercise

19 Digital product passports in scope

More mature on construction materials

Mostly at design or start-up phase

Three pilots for three CE policy questions

# Pilot 2: Estimating product life-spans

# Nature of the exercise

Textiles and electronics in scope

Traditional and non traditional sources

Official statistics
Digital sources
Product guarantees and standards
Anonymised company data

Basket of products

Product-specific estimation method

Overall indicator

Interpretation of environmental dimension

# Pilot 3: Webspace for a sandbox of indicators on Circular Economy

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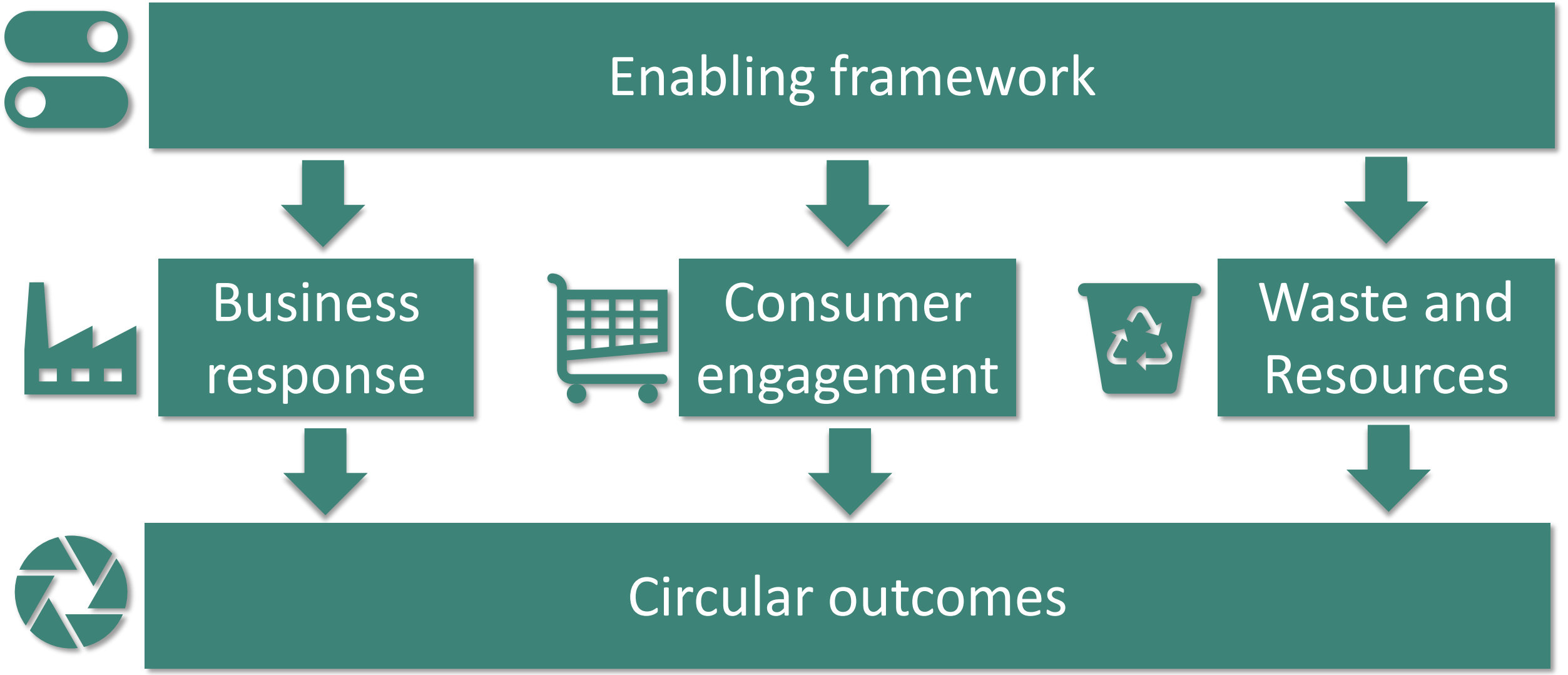
# Logic of the site



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# From indicators to signals

*(i)* ***Complete indicators*** *with full, updatable datasets from existing and freely available data sources*

*(ii)* ***Incomplete indicators*** *where data is available for only a few European countries or for fragmented time series*

*(iii) Incomplete indicators, very suitable for the purpose of monitoring Circular Economy, where data is not available now but* ***may become available in the future***

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# A few hints about what we will be including

Loan volume on circular economy projects

Car sharing use

Product life-spans for selected sectors

Textile Waste Recovery

Production and Consumption of Chemicals and Hazardous Chemicals

Consumer alternatives to buying new products

Environment modulated green public procurement

Volume of tax-deductions associated to circular economy

Circular City Index

Household expenditures on repair, hire and maintenance, disaggregated by product groups

# Concluding remarks

# Four messages to take home

1 Circular economy is not an end-of pipe concept – the emphasis must be in solving issues upstream in the material cycle

2 Innovation is key, with technology, but more so with new societal and business models – this will ensure revenue streams that reduce material use, carbon emissions and pollution

3 Established monitoring mechanisms are very good at understanding material flows and end-of-pipe elements of this policy but less so to understand the multiple societal and economic transformations that will enable a circular economy

4 There is space for innovation and complementarity to unpack these transformations and orientate future policies to accelerate the transition to a circular model

# Thank you