Circular economy: policy perspective

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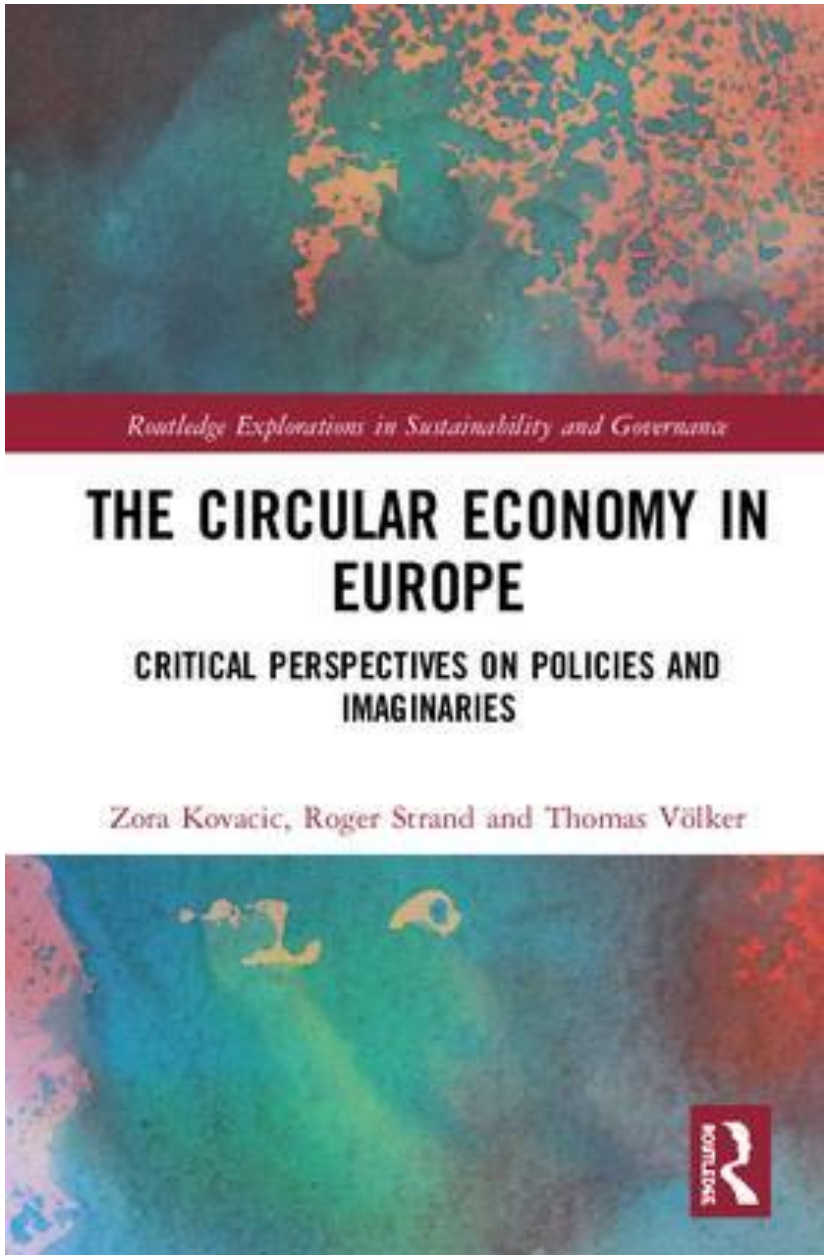

MAGIC NEXUS

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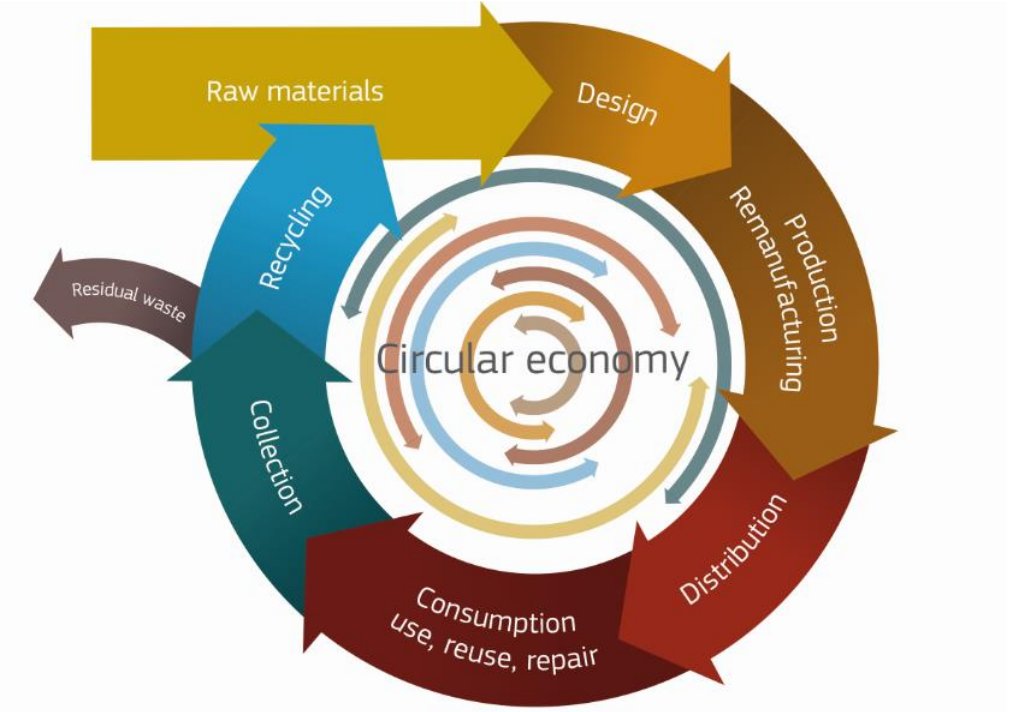
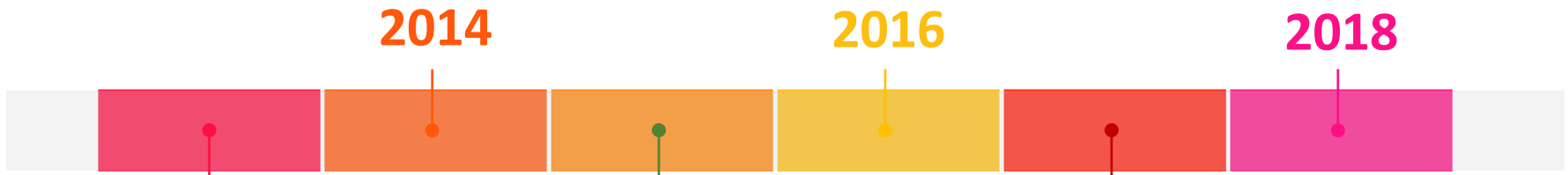
Circular Economy in Europe

- An economy, “where the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised”

(EC Communication: Closing the loop, 2015)



Policy “in-the-making”



2012

Ellen MacArthur Foundation “Towards the Circular Economy” Report commissioned by EC

2014

EC Communication “Towards a Circular Economy”

2015

EC Communication “Closing the loop”

European Circular Economy Conference

2016

Raw materials Scoreboard

EC Communication Ecodesign

2017

EC Communication waste-to-energy

Implementation report

Roadmap to monitoring framework

Proposal for Directive on restriction of hazardous substances in electrical and electronic equipment

Stakeholder Platform

2018

Stakeholder Conference

Monitoring Framework

Plastics strategy

Report on Critical Raw Materials

Developing the idea

Monitoring

Regulating

Consultation

How did the CE policy come into being?

Issues at stake

Narratives of “Stop” (limits to growth) and “Go” (innovation and progress)

“A seat at the table” for DG ENV

Stop – logic of limits	**Go – logic of growth**
- Environmental perspective - Waste management - Security (resource scarcity, geopolitical issues, renewable resources)	- Economic perspective - Economic growth in the context of austerity and unemployment - Innovation & ecodesign

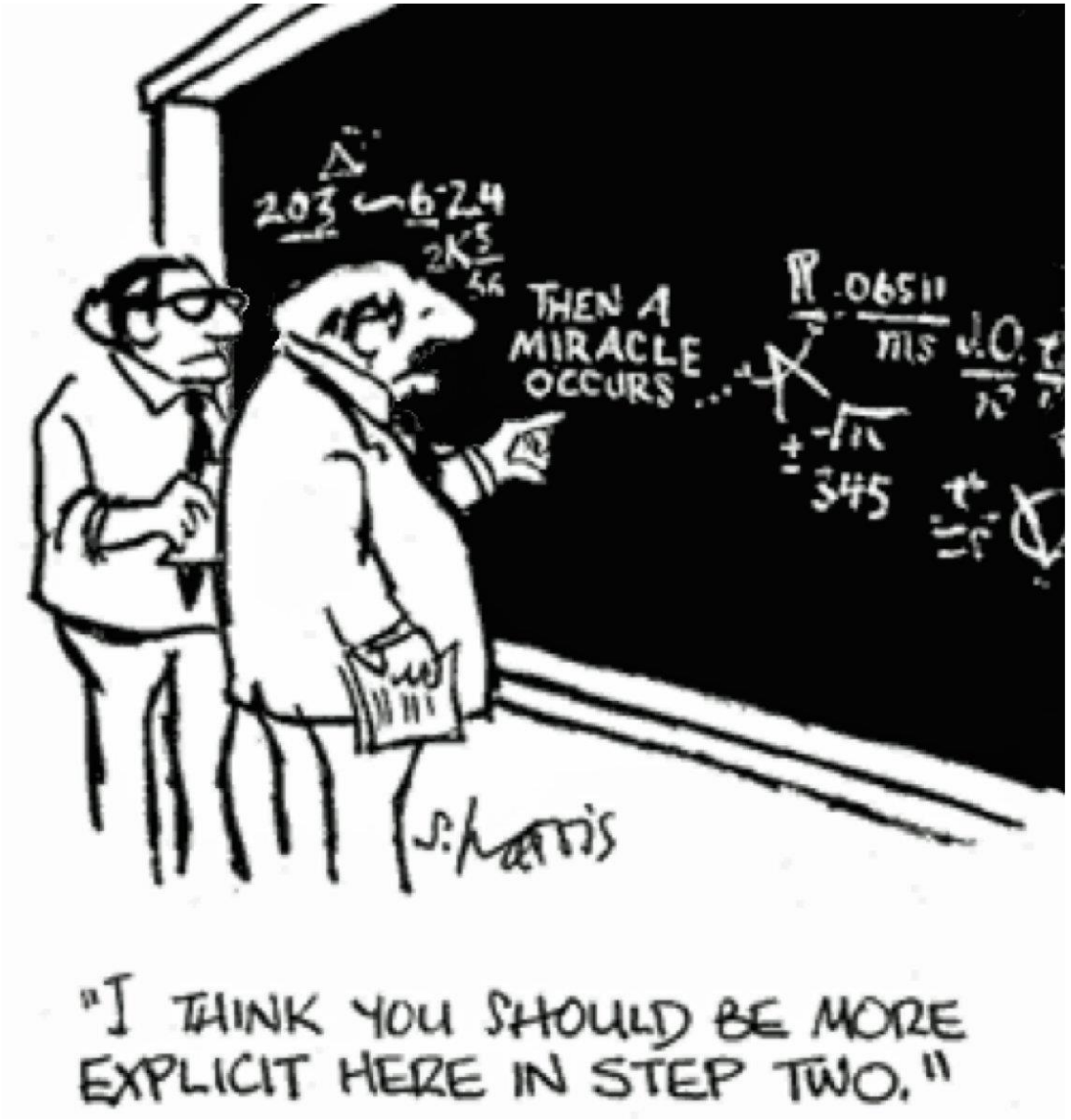
The win-win policy

- Rehersal of the historical tension between “stop” and “go” narratives
- Sustainable development
- The Circular Economy policy
  - Win-win rhetoric
  - Moderation
  - Synergies and opportunities

3 scenarios (Staff working document 2014)

- (i) business as usual (which leads to moderate improvements in resource use);
- (ii) transition scenario (which requires going back to the resource productivity growth of the pre-2008 crisis period);
- (iii) acceleration scenario (improving resource efficiency above levels experienced in the past)
- Scenario 2 is projected to achieve the circular economy

How credible is the win-win rhetoric?



The concept of the CE

- Fragmented knowledge base
- The thermodynamic understanding
  - The economy and the ecosystem

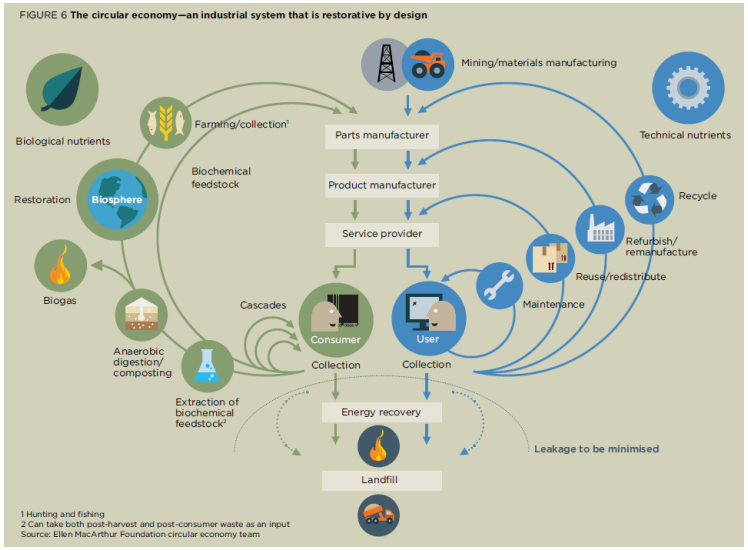
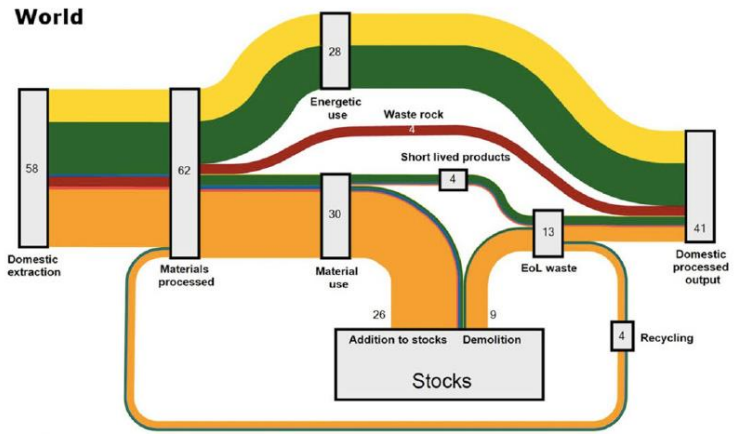
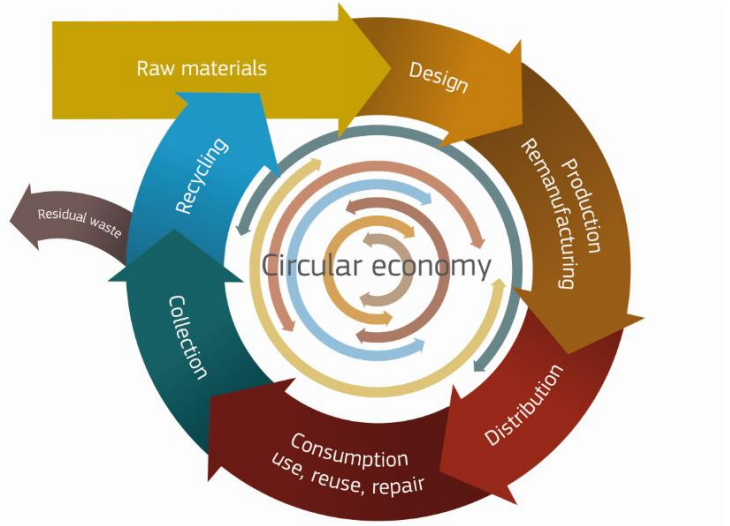


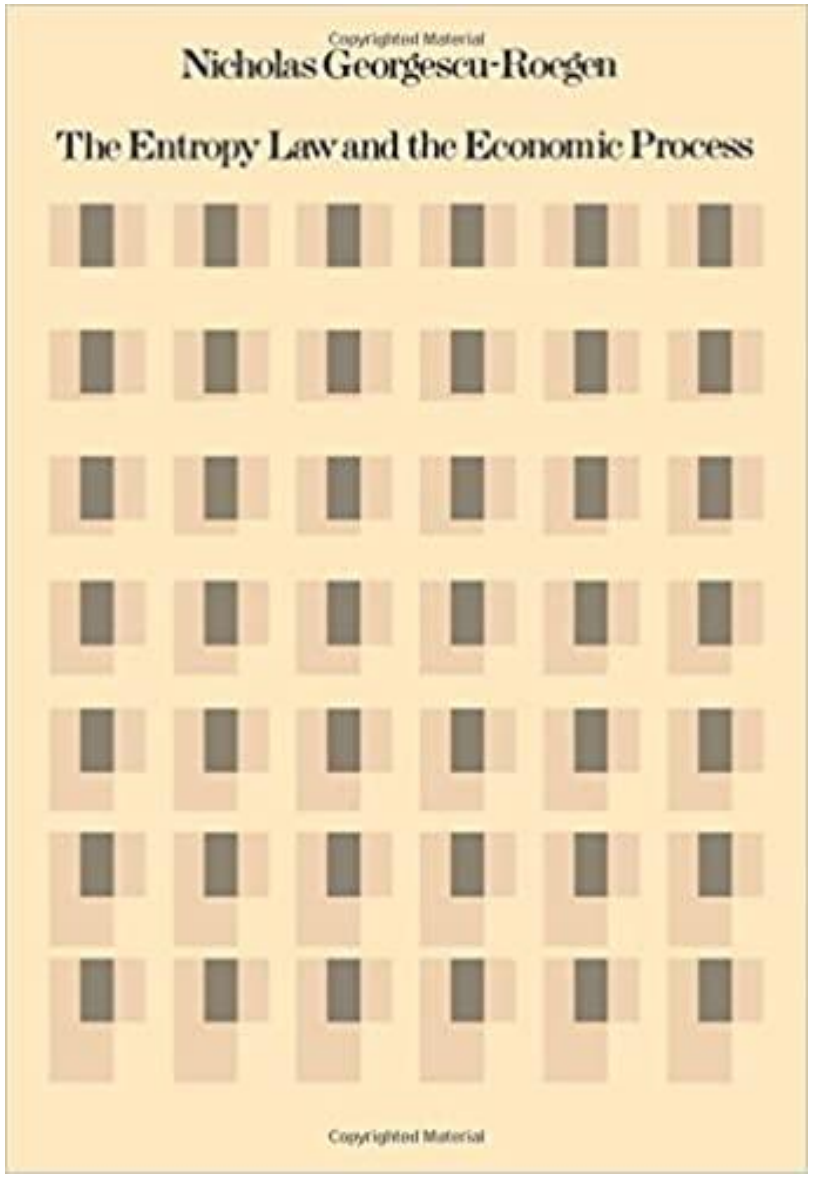
FIGURE 6 The circular economy—an industrial system that is restorative by design
Mining/materials manufacturing
Biological nutrients
Farming/collection[1]
Technical nutrients
Parts manufacturer
Biochemical feedstock
Restoration
Biosphere
Product manufacturer
Recycle
Service provider
Refurbish/ remanufacture
Reuse/redistribute
Biogas
Maintenance
Cascades
Consumer
User
Anaerobic digestion/ composting
Collection
Collection
Extraction of biochemical feedstock[2]
Energy recovery
Leakage to be minimised
Landfill
1 Hunting and fishing
2 Can take both post-harvest and post-consumer waste as an input
Source: Ellen MacArthur Foundation circular economy team


World
58
Domestic extraction
62
Materials processed
28
Energetic use
Waste rock
4
Short lived products
4
30
Material use
13
EoL waste
41
Domestic processed output
26
Addition to stocks
9
Demolition
Stocks
4
Recycling


Raw materials
Design
Production
Remanufacturing
Distribution
Consumption
use, reuse, repair
Collection
Recycling
Residual waste
Circular economy

Thermodynamics

"When we examine a biological cell or a city, however, the situation is quite different: **not only are these systems open, but also they exist only because they are open**. They feed on the flux of matter and energy coming to them from the outside world. We can isolate a crystal, but cities and cells die when cut off from the environment.“ (Prigogine and Stengers 1979)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Nicholas Georgescu-Roegen
The Entropy Law and the Economic Process
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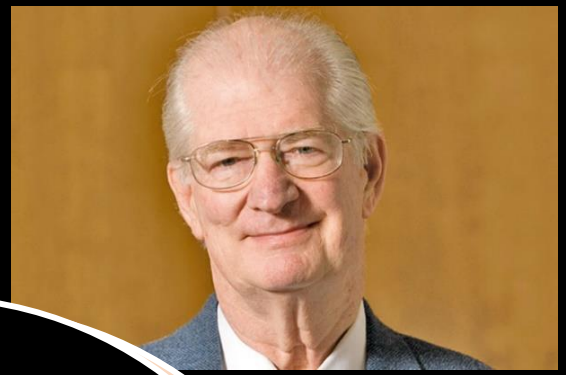
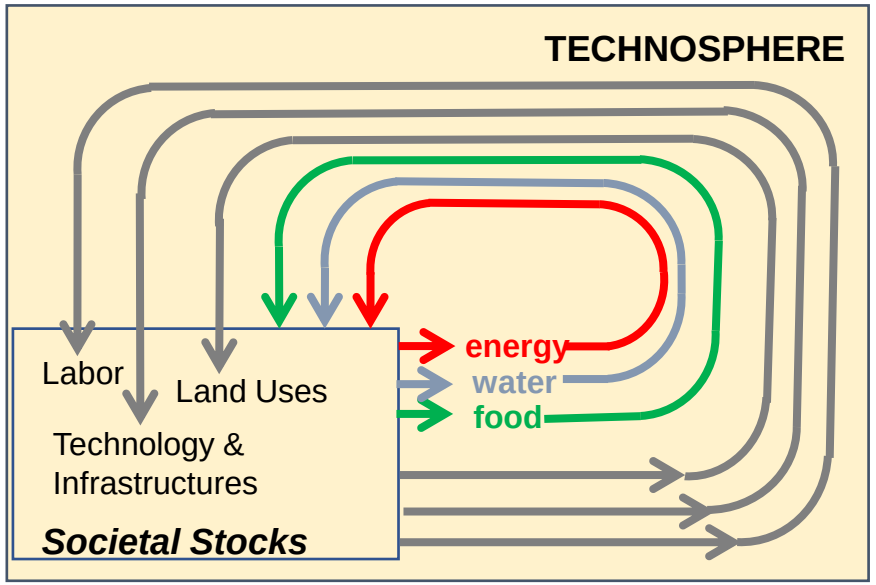
Ecological economics

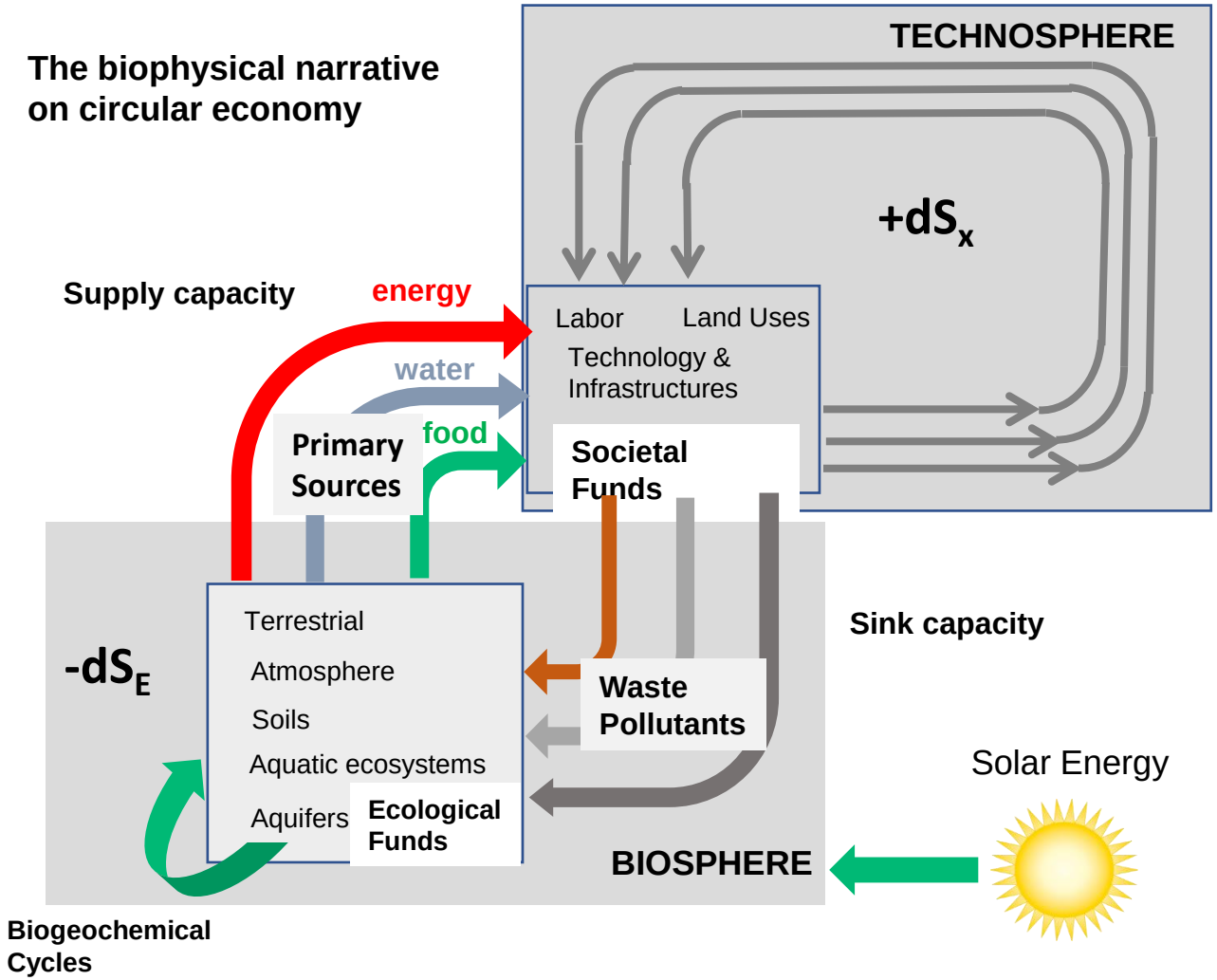


"One might as well ask an engineering student to explain how a car can
run on its own exhaust, or ask a biology studentto explain how a n organism can metabolize its own excreta.” (Daly 1985)

The view of a growing circular bioeconomy



* Is it a growing perpetual motion machine?
* No relation between the size and activity of the economy and the size and activity of the environment


The biophysical narrative on circular economy
TECHNOSPHERE
+dSx
Supply capacity
energy
water
food
Labor
Land Uses
Technology & Infrastructures
Primary Sources
Societal Funds
-dSE
Terrestrial
Atmosphere
Soils
Aquatic ecosystems
Aquifers
Ecological Funds
Waste Pollutants
Sink capacity
Solar Energy
BIOSPHERE
Biogeochemical Cycles

The 16th Century Map

Imagining Circularity

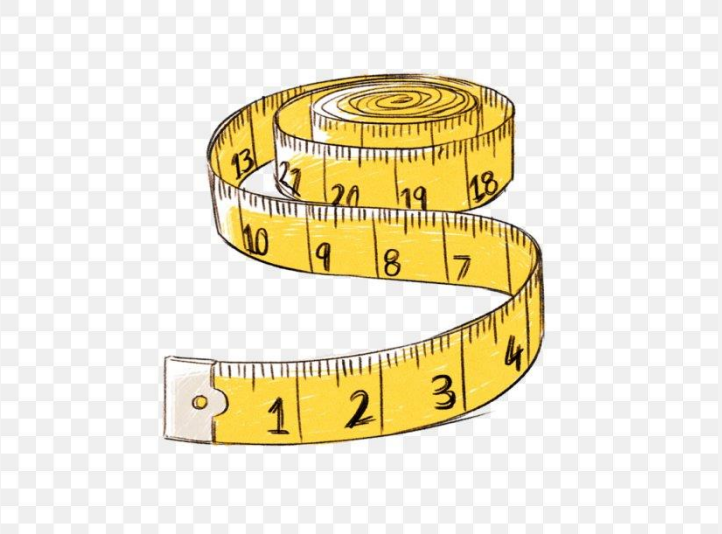
- Multiple meanings of “circularity”
- Meanings entail ideas about desirable futures, ideas about which futures “we” want to make real and which futures to avoid

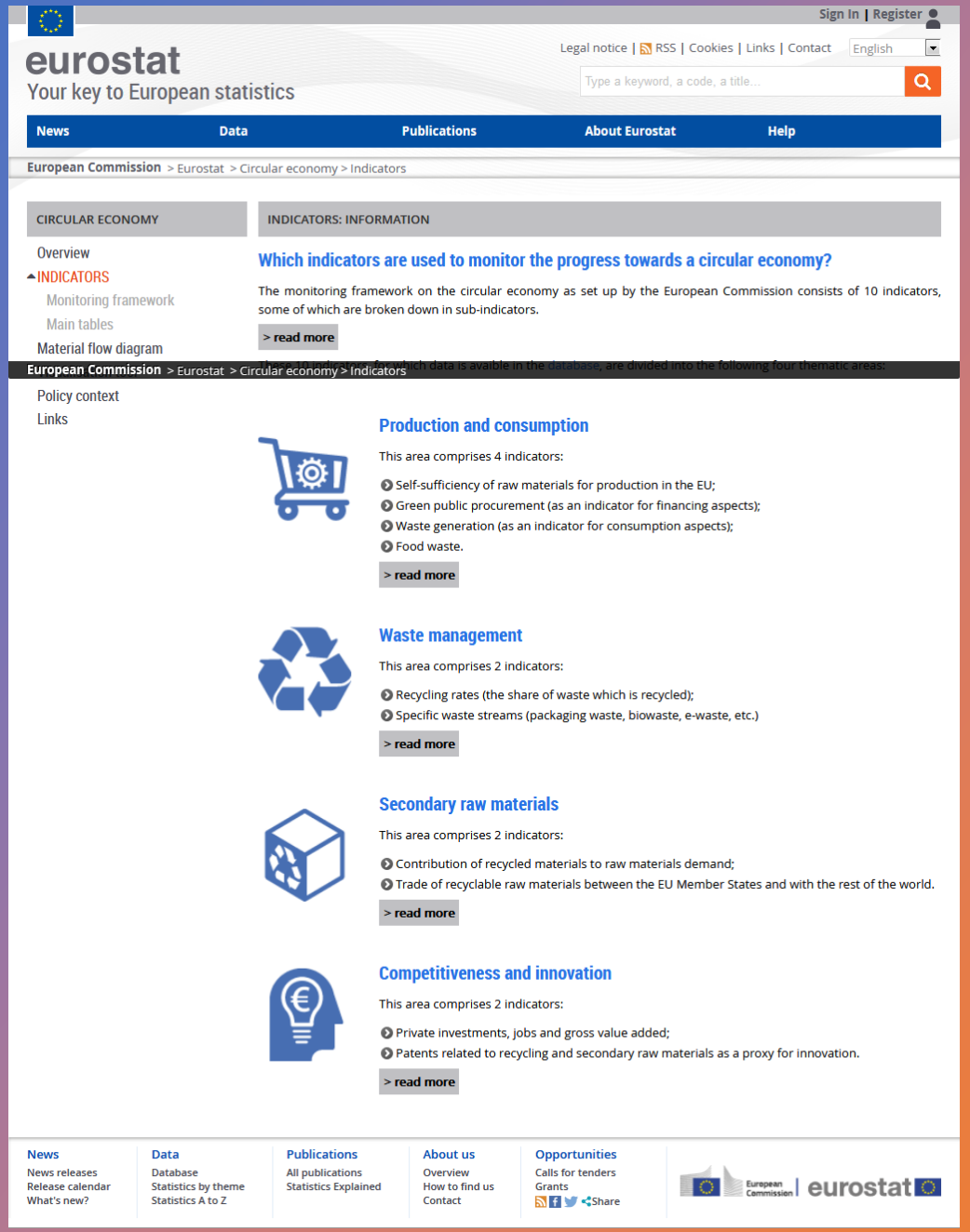
Who defines circularity?

- Quantification (competing proposals for indicators and monitoring)
- Stakeholder conferences and stakeholder consultation
- The role of the Ellen MacArthur Foundation
- Academic disciplines (LCA, MFA, industrial ecology – technofix?)

Measuring Circularity

- Numbers are at once (i) the outcome of negotiations on how to represent society and its activities, and (ii) are consequential in enacting particular realities
- Indicators of the CE:
  - Material flow analysis
  - Life-cycle assessment & ecodesign
  - Hazardous waste, recycling rates

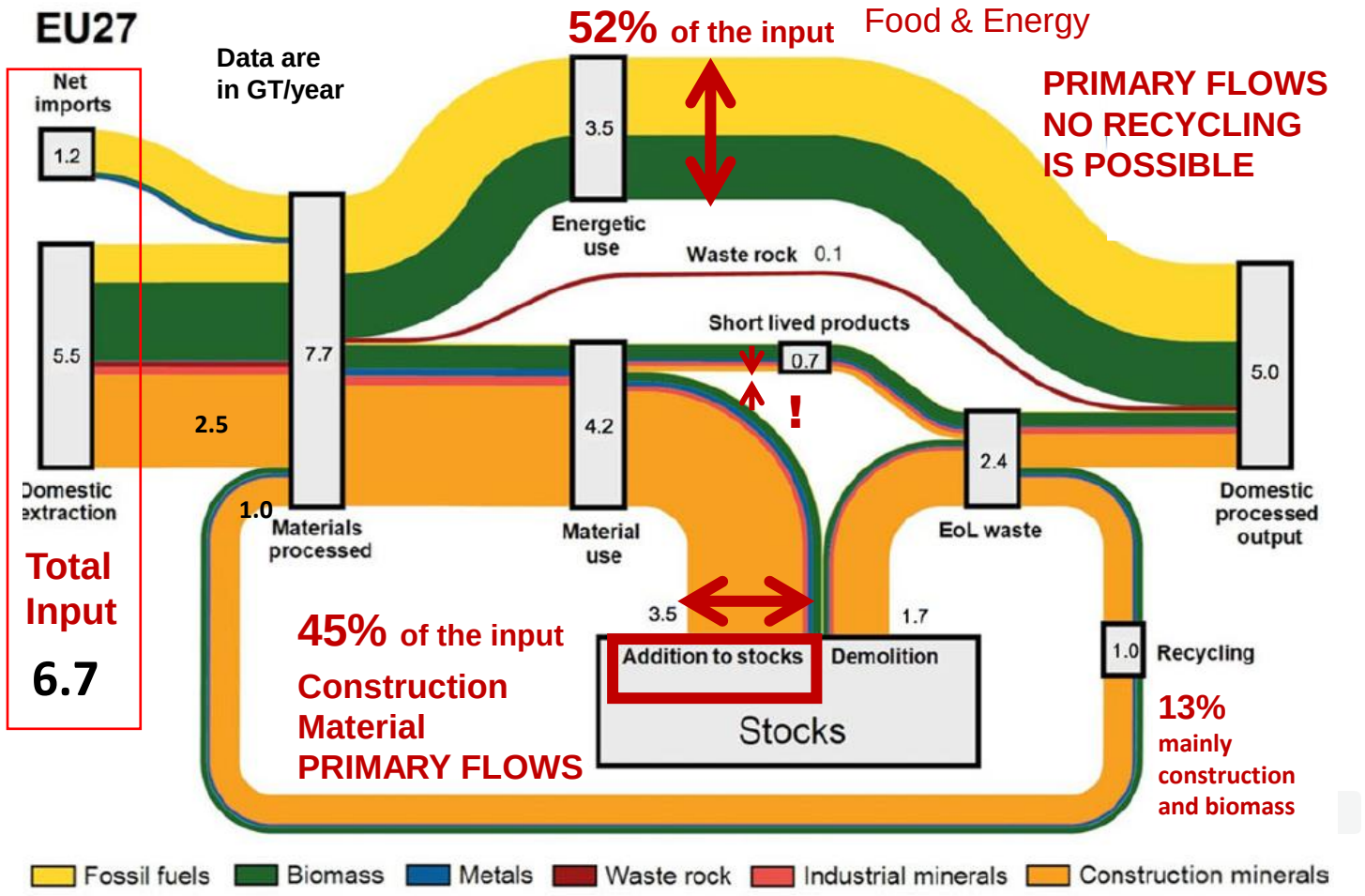




Indicator development

- Heterogeneous Assemblage of actors
  - European Commission, Joint Research Centre,
  - DG GROW, DG ENV, DG ESTAT
  - European Environment Agency
  - Universities
- Selectivity of Indicators
  - Focus on waste management
  - Blindspots regarding production, consumption, re-use, repair
- Measurmentality & ‘Trajectorism’
  - Producing temporalities and trajectories
  - Monitoring and controlling

→ **Which circularities are being monitored and enacted?**



Haas et al. 2015 – Journal of Industrial Ecology 19 (5): 765-777

Stakeholder conferences

WCEF2023: Apply for a side event or host an Expo Area stand!

20 Mar 2023

The World Circular Economy Forum 2023 Expo Area at Messukeskus in Helsinki, Finland will shine a spotlight on selected circular economy solutions from around the world. Would you like to present your solution to the global audience at the Forum?

https://circulareconomy.europa.eu/platform/en/toolbox

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Toolbox - active page

- Financing CE in the EU »
- Financing CE in practice
- Education and Training
- Measuring the circular economy
- Toolkits and guidelines

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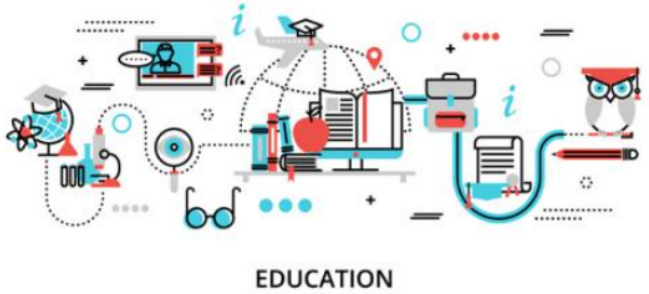
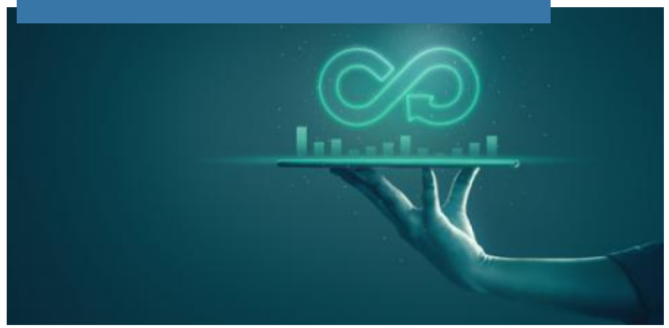
Toolbox

Education





Financing CE in the EU

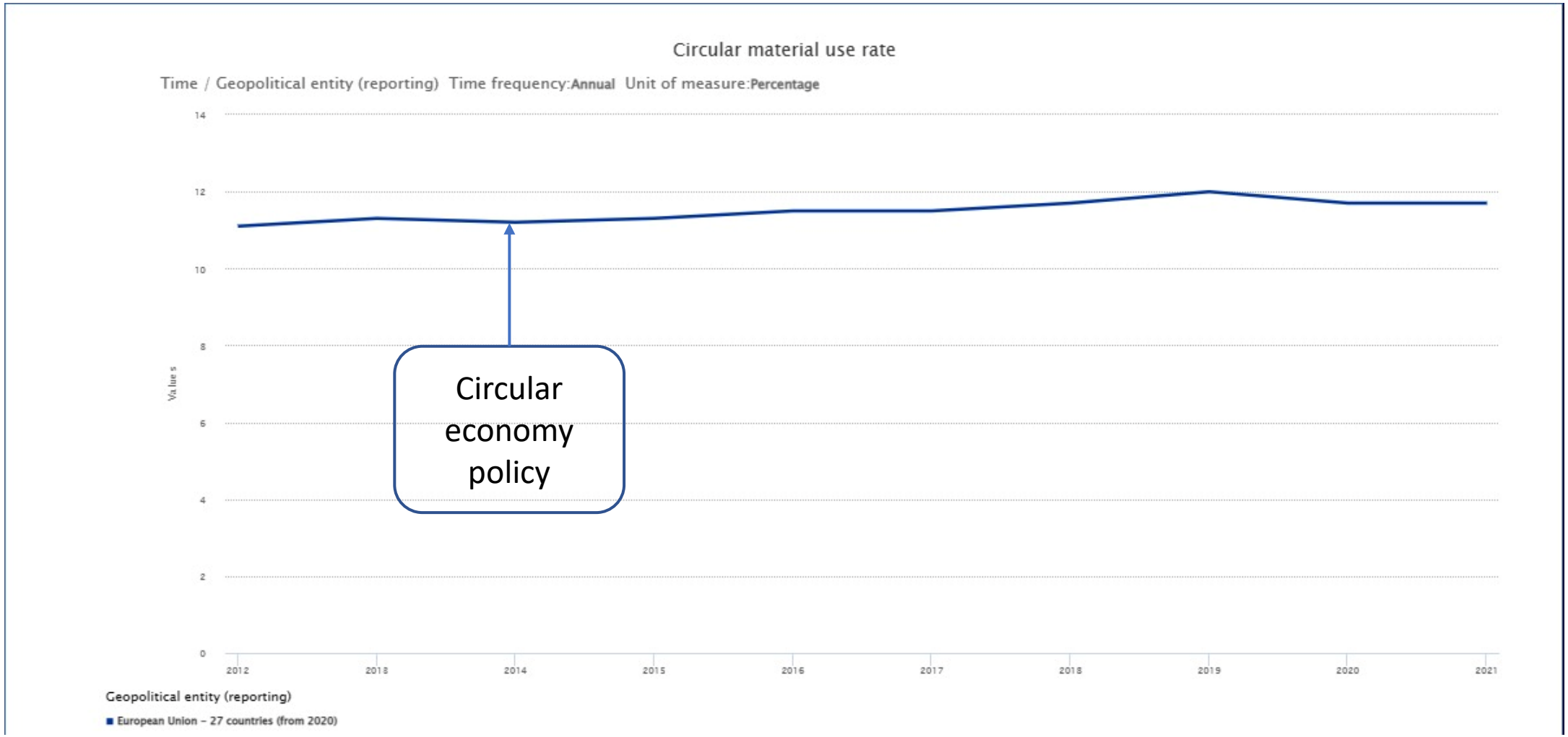
The CE has been delivered

POLITICO

CIRCULAR ECONOMY GOALS REACHED? The Commission today claimed [4 March 2019] that its 2015 plan to move Europe toward a circular economy "can be considered fully completed." It said all 54 of the actions it promised have either been completed or are being implemented.

— NOT SO FAST: Ahead of the conference, Eurostat published a circular economy implementation report. While the report found that "recycling rates and use of recycled materials in the European Union are steadily growing," it reported that only 12 percent of materials used in the EU in 2016 came from recycled and recovered materials.

Circularity indicators



Why does the idea of “circular economy” stick?

“We argue that **the circular economy policy sticks because of vagueness**, which can be interpreted to the advantage of multiple actors, can be adapted to changes in policy officers and policy agendas, and is broad enough to represent a generic goal for the economy, escaping the accountability of more concrete promises.”

The power of goodness (Godhetsmakt)

- It is politically impossible to argue against the ‘Good’: “It becomes impossible to oppose [...] goodness because one would appear as evil, cynical or selfish.” (Loga 2004)
- “no one would argue for less circularity” (workshop, May 2018).
- that “we are moving in the right direction” (workshop, May 2018)

Gaining traction

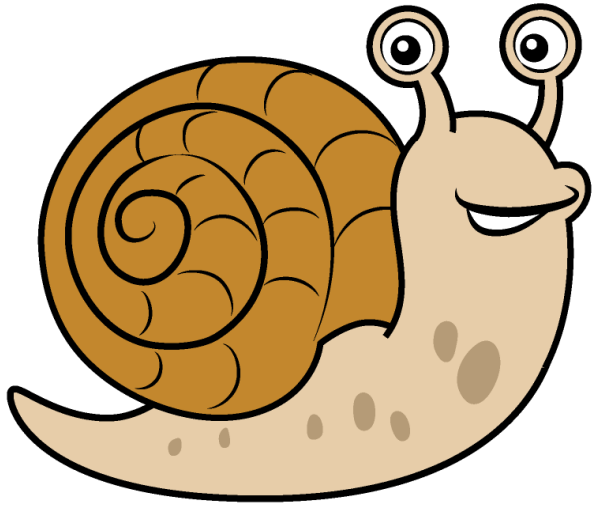
- European Green Deal
- Means of chanelling EU funding

Type of initiative	Number of initiatives (percentage)
Circular, ecodesigned, recycled products & materials	61 (41%)
Sector specific[1]	26 (18%)
Social projects, sharing economy, reuse & repair	22 (15%)
Awareness raising, scoping study, education	14 (10%)
Apps & online platforms	12 (8%)
Business services	12 (8%)
TOTAL	147 (100%)

[1] Waste management (9), water (2), energy (10), mobility (1), urban agriculture (3), ecology (1)

Own elaboration. Data source: https://mediambient.gencat.cat/ca/05_ambits_dactuacio/empresa_i_produccio_sostenible/economia_verda/catalunya_circular/iniciatives/index.html (Last consulted 10/03/2022).

A new buzzword? A way forward?



Is a circular economy a slower economy?

- “it takes 9 days for water to cycle through the atmosphere, while it takes 37,000 years for the oceans to complete a cycle. Phosphorus takes 2000 years to cycle through the soil as does nitrogen. Carbon dioxide takes 4 years to cycle through the atmosphere while atmospheric oxygen takes 3.7 million years” (Murray et al. 2017)
- Linearity makes it possible for the pace of economic activity to be determined by the production of goods and services, while a circular economy would depend on the pace of production of the primary inputs

BRIEFING

Growth without economic growth

Economic growth is closely linked to increases in production, consumption and resource use and has detrimental effects on the natural environment and human health. It is unlikely that a long-lasting, absolute decoupling of economic growth from environmental pressures and impacts can be achieved at the global scale; therefore, societies need to rethink what is meant by growth and progress and their meaning for global sustainability.

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Thank you for your attention!