A short guide to the Circular Economy: The CEPS framework

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Based on the CEPS Special Report on the Circular Economy
We aim to rethink the concept of the ‘circular economy’ through the prism of its relevance to its many stakeholders, ranging from public and private actors and mature and emerging industries to cities and regions, SMEs and multi-sectoral corporations. The publication presents a schematic framework, which breaks down the circular economy into eight fundamental building blocks and shows how they are interconnected in relation to the multiplicity of involved actors.

Coincidentally called “CEPS” (short for Circular Economy Progress for Stakeholders), the framework is used to develop recommendations addressed to European policy-makers on how best to support the transition towards a circular economy in the EU.
Structure of the presentation

• **Introduction**
  • Introduction to Circular Economy (CE) concept
  • Main challenges

• **Section 1**
  • CE building blocks and practical examples

• **Section 2**
  • RESTORE framework

• **Section 3**
  • Policy recommendations

• **Conclusions**
Main milestones towards the Circular Economy policy in the EU

- **1960s**: Foundations for sustainable development concept
- **1990s**: Mainstreaming sustainable development
- **2000s**: Mainstreaming green economy
- **2010s**: Mainstreaming Circular Economy
- **2015**: Official EU Policy
What is Circular Economy

CE started developing in the 1970s as an alternative economic model, challenging the traditional linear industrial economy. The linear economy is based on a linear process, optimised towards high throughput and low production costs relying on the abundant availability of raw materials at relatively low cost. The typical process consists of a series of steps – resource extraction, manufacturing, consuming and disposing of products at the end of their life cycle – which is also referred to as a take-make-consume-dispose model. The circular economy, on the other hand, aims at low environmental impact by minimising waste and excessive resource use by turning goods at the end of their lifespan into resources for others through re-use, re-manufacture, re-cycle, waste reduction and other practices. In other words, CE is restorative by design and intention.
Circular Economy pillars, challenges and solutions

**CIRCULAR ECONOMY PILLARS**
- Environmental benefits
- Savings from reduced resource use
- New markets

**CIRCULAR ECONOMY CHALLENGES**
- Ongoing Environmental Pressures
- Relatively low energy and commodity prices
- Lack of clarity for business and policy makers

**SUGGESTED SOLUTIONS**
- See Section 3 - policy recommendations
- CEPS framework – provides clarity on the CE concept (Section 2)
## Circular Economy Building Blocks

<table>
<thead>
<tr>
<th>CIRCULAR ECONOMY BUILDING BLOCKS</th>
<th>EXAMPLES THAT CAN BE FOUND IN THE PAPER</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDUSTRIAL SYMBIOSIS</td>
<td>Kalundborg Symbiosis</td>
</tr>
<tr>
<td>MATERIAL RESOURCE EFFICIENCY</td>
<td>Car engines</td>
</tr>
<tr>
<td>RES &amp; ENERGY EFFICIENCY</td>
<td>Buildings</td>
</tr>
<tr>
<td>BIOLOGICAL PRODUCTS</td>
<td>“Just Egg”</td>
</tr>
<tr>
<td>PRODUCT LIFE CYCLE EXTENSION</td>
<td>Fairphone/Google’s “Ara”</td>
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<td>PERFORMANCE ECONOMY</td>
<td>B2B leasing</td>
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<tr>
<td>SHARING ECONOMY</td>
<td>Zipcar</td>
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<tr>
<td>PLATFORM ECONOMY</td>
<td>eBay, Uber</td>
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**SECTION ONE (1/4)**
Example 1: Industrial Symbiosis – Kalundborg Symbiosis

The most known example of the “classic” Industrial Symbiosis is Kalundborg Symbiosis, cooperation of eight public and private enterprises from different industry sectors in Kalundborg, Denmark. Kalundborg Symbiosis includes exchanging and sharing water, energy and other resources, already for more than 40 years.

Kalundborg Symbiosis - http://www.symbiosis.dk/en

Analysis and additional examples can be found in the paper: https://www.ceps.eu/system/files/SR%20No143%20Circular%20Economy.pdf
Example 2: Sharing platforms - Zipcar

One Zipcar (an American car sharing company) takes off 5-20 private owned vehicles off the road (University of Pennsylvania 2015), saving both material resources and avoiding CO2 emissions.

Analysis and additional examples can be found in the paper:
Example 3: Biological products – Just egg

“Just Egg”, a British hard boiled eggs manufacturer, based in Leicester, was paying about EUR 36.000 (£30.000) a year for burying its by-product, 480 tonnes of eggshells, into the landfill. Together with Leicester University it has developed a technology to transform the eggshells into powder that can be used in the production of plastics, i.e. making biological waste a resource for the plastic sector.

Analysis and additional examples can be found in the paper: https://www.ceps.eu/system/files/SR%20No143%20Circular%20Economy.pdf
## Circular Economy Progress for Stakeholders

### CIRCULAR ECONOMY BUILDING BLOCKS

|----------------------|-----------------------------|-------------------------|---------------------|-----------------------------|---------------------|----------------|----------------|

### CIRCULAR ECONOMY STAKEHOLDERS

#### Classic (mature) industries

- Automotive
- Plastics
- Agriculture
- Construction

- Technology & Electronics
- Metals
- Food & drink
- Chemicals

- Energy
- Forestry
- Others

#### Emerging industries – new markets

- Product and services platforms
- Product lifelong warrantee schemes
- Refurbishment schemes
- Leasing & sharing schemes
- Others

#### Multi-sectoral approach

- Geographical level – city (can be also region & country)

#### SMEs

#### Multi-sectoral Corporations
Policy Recommendations

General Policy Recommendations

Streamlining the links between the circular economy and the collaborative economy (the CEPS framework provides an overview of these links and guidelines for addressing them with policies).

Incorporation of the CEPS framework in forthcoming circular economy legislative initiatives, as called for in the European Commission’s Circular Economy Action Plan:
- Plastics Directive
- Energy Union Initiatives on Research and Innovation Strategy and waste to energy framework
- Numerous legislative initiatives on the circular economy beyond 2016

Price-based mechanisms targeting consumers – reduction of VAT for circular economy-certified products and services

Financing the circular economy
- Providing better access to public financing
- Incorporating circular economy aspects into cohesion funds requirements
- Adopting SME-specific policy measures

Strengthening the three pillars of the circular economy

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<tr>
<th>ENVIRONMENT</th>
<th>COST SAVINGS</th>
<th>NEW MARKETS</th>
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</thead>
<tbody>
<tr>
<td>Introducing mandatory or voluntary resource-use targets</td>
<td>Shifting taxation from labour to natural resources</td>
<td>Creating partnerships between different types of stakeholders</td>
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<td>Introducing circularity indicators</td>
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<td>Taking into account the whole life cycle of products and services for public procurement</td>
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<td>Introducing circular economy labelling – recyclability, re-manufacturability and re-usability of products</td>
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Conclusions (1/2)

Although the transition to a circular economy is currently high on the policy agenda in Europe, the linear model of producing and consuming goods and services in Europe continues to prevail. One of the reasons is the complexity of the circular-economy concept, which eventually will affect all sectors of the economy. Policy-making based on political, thematic or sectoral ‘silos’ will not be effective for fostering this transition.

With the introduction of the CEPS Framework, we aim to provide a tool for policy-makers and business to identify sectors and stakeholders affected by the transition to a circular economy. By identifying eight building blocks of the circular economy and various stakeholders engaged in these blocks, the CEPS Framework allows for a standardised approach to policy-making for the circular economy and for creating synergies between various building blocks and stakeholders. The incorporation of the CEPS Framework into EU policy would thus allow Europe to better exploit the opportunities offered by the circular economy.
Conclusions (2/2)

On the basis of the CEPS framework, we also propose to strengthen the three ‘pillars’ of the circular economy: 1) environmental benefits, 2) cost savings from reduced natural resource needs and 3) additional economic benefits of new markets.

We suggest that the implementation of the CEPS framework and of the policy recommendations associated with these three pillars will help to fully integrate circular economy principles into the European economy.
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