

Impacts of the circular economy transition in Europe

CIRCULAR IMPACTS

Final Conference Summary

Brussels, 05 September 2018
Venue: CEPS, Place du Congrès 1, 1000 Brussels

Attendees included officials from different European Commission departments, national ministries, industry and NGOs. About 150 people attended the event.

Setting the scene and presentation of the CIRCULAR IMPACTS library of evidence

Summary of discussions held

The keynote speech was delivered by Mr Patrik Kolar, Head of Department at EASME (Executive Agency for Small and Medium-sized Enterprises). These opening remarks provided the audience with an understanding of the main EU initiatives in the circular economy. He highlighted that a transition to a more circular economy could bring many benefits, including economic ones. He underlined that this transition is not only about protecting the environment, but also about a transformation of the economy involving full system changes. Nevertheless, a few questions should be answered during this shift, for example, how can we measure the impacts of a transition towards a circular economy and how can we monitor trends and patterns that are important to assess whether it is successful or not?

In light of this, he hopes that in the successor programme to Horizon 2020, the 'Horizon European' programme to be launched in 2021, part of the funding will be directed towards circular economy research projects.

Following the keynote speech, Aaron Best, the project coordinator of CIRCULAR IMPACTS as well as Senior Fellow at Ecologic Institute provided an overview of the project. In his presentation, he spoke about the project's success in clarifying circular-economy definitions, analysing policy frameworks, conducting in-depth case studies and examining scenarios, data and indicators to understand the macro-economic, societal, environmental and labour market impacts of a transition to a more circular economy. He provided the audience with an introduction to the step-by-step case study methodology developed and tested by researchers of the project and later the evidence library developed by the CIRCULAR IMPACTS team. The aim of the library is to enable policy makers and analysts conducting impact assessments with a tool to find studies, reports, articles, government documents, etc. related to the circular economy through typing keywords or filtering by type of evidence, sectors, policy changes, impacts etc.

Key issues raised during the discussion

Question: What is the link between the circular economy and the European Semester and how was it taken into account during the project?

Answer: The European Semester was founded on short-term macroeconomic goals, yet a long-term perspective is needed for a shift towards a more circular economy, hence longer-termed goals should be taken into account. There is a lack of economic data related to the circular economy and a need to improve the evidence base in order to better integrate circular aspects within the Semester. Added to this, there is also an issue of timing considering the time lag of indicators related to the environment.

Question: What are the most important barriers to a circular economy and what might be the solutions?

Answer: The circular economy can be a slippery concept as circular does not necessarily mean green. Regulatory issues are a key barrier and policies for increased circularity must be embedded into the legislation in member states.

Impacts and potential benefits of the circular transition in three sectors: electric vehicle batteries, car sharing and building-materials

Summary of discussions held

This session, moderated by Vasileios Rizos, a Research Fellow at CEPS, presented the evidence and quantitative estimates from the CIRCULAR IMPACTS project. Particularly the impacts and potential benefits of moving towards a circular economy. Three case studies, each from different sectors, were presented; electric vehicle batteries, car sharing and building materials. The session also offered an opportunity to discuss the policy instruments that can foster the transition to a more circular economy in these sectors.

The first case study on 'Prospects for EV Batteries in a Circular Economy', presented by Eleanor Drabik, a Researcher at CEPS, provided evidence about the impacts of managing a large number of end-of-life lithium-ion batteries used in electric vehicles. The analysis was based on the comparison of two different hypothetical scenarios, with the second being more ambitious. The case study estimates that by 2040, materials worth €2.6 billion could be recovered from recycled electric vehicle batteries and retained in the EU economy.

Aaron Best, a Senior Fellow at the Ecologic Institute presented the next case study on 'Car Sharing in Germany'. A key message from this presentation was that a future with multi-modal shared mobility requires a policy framework that fosters public transit in dense urban areas and that the issue of hidden subsidies to car-based transport is addressed. It was also revealed that although media attention has yielded a high degree of societal familiarity with the car sharing concept, only a relatively small number of car sharing vehicles exist today, with car sharing in Germany accounting for only 0.1% of motor-vehicle passenger-km in 2017.

The last case study on 'Concrete recycling in France' was presented by Laurens Duin of the Ecologic Institute. It showed that there are minor improvements in the environmental impacts of the circular scenario compared to the business-as-usual scenario, but that identifying the

economic and social impacts of using concrete aggregates was extremely difficult due to strong interrelation with regional and local circumstances. It was recommended that the European Commission seeks to capture the benefits of recycled concrete, keeps investing in making concrete more sustainable and improves statistical knowledge about the market.

Commenting specifically on this case study, Vincent Basuyau, Policy Officer at DG Grow, provided an overview of the EU policy areas associated with construction and demolition waste that have already been delivered along with the work in progress of the European Commission. Patrick ten Brink, Director for EU Policy at the European Environmental Bureau (EEB), commented on all the case studies and raised the question of whether the level of ambition in current policies is sufficient for achieving the objectives of a disruptive concept such as the circular economy.

Key issues raised during the discussion

Question: Have you included the idea of alternative building materials into your study?

Answer: Concrete is very widely used and so would be very hard to substitute.

Question: Did you include the disruption of new and different battery technologies in your study?

Answer: There is a lot of innovation in the battery sector, particularly for electric vehicles, but you also have to bear in mind that the scenarios are based on the impacts in 2030, hence those batteries at their end-of-life in this year were on the market in 2022 and 2012 (if they had a second-life). We appreciate that the results are more uncertain in the later years and we did take into consideration the different types of batteries, which are discussed in the report.

Question: Regarding car sharing, have you thought about behavioural change? What about the issue of giving access to cars to people who currently do not have the chance to use cars at all?

Answer: Behavioural change is a key source of uncertainty regarding the future of shared mobility. It remains to be seen how the uptake of car sharing will compare to ride-sharing services and to what degree users are attracted to/from using public transport. Significant behavioural changes can be expected with the adoption of autonomous vehicles, which will open new transport possibilities for non-drivers and drivers alike.

Comment: One of the issues raised during the discussion concerned the absence of a clear definition of “re-use” within the Battery Directive, which creates a grey zone for batteries. The Directive is undergoing a review and this provides an opportunity to include these definitions.

Economics and policies of the circular transition

Summary of discussions held

Arno Behrens, an Associate Senior Research Fellow at CEPS, moderated the last session. Drawing on the results provided by CIRCULAR IMPACTS about the impacts of moving towards a circular economy in different sectors, speakers discussed the different options for developing scenarios about the circular economy transition and evaluating the economic, social and environmental

impacts. There was also a focus on the indicators that can be used at the micro and macro level for assessing the opportunities of the circular economy.

Louise Meuleman who is the co-ordinator of the European Semester & Environmental Implementation Review for DG Environment at the European Commission provided the first intervention of the session. He started by providing an overview of the European Semester and highlighted that as an estimate, the costs of implementation gaps in relation to currently legally binding targets could be around €50 billion per year. He discussed the case studies presented in the previous session, stating that the results can be used in some of the chapters of the European Semester. He also suggested there are already efforts to better integrate the circular economy into the European Semester, but that we have to understand that the Semester is a very political process. In conclusion, he expressed interest in doing more with scenario analysis and also highlighted the openness of other DGs towards incorporating environmental topics into the European Semester because of emerging evidence around their economic benefits.

The RE-Circle project, introduced by Rob Dellink, a Senior Economist at the OECD, aims to provide policy guidance on resource efficiency and the transition to a circular economy. It quantifies the impact of policies to guide stakeholders through quantitative and qualitative analysis. They look at the impact of shifting to a more circular economy on GDP but also on employment and skills. He provided five main drivers of future material use including population growth, income convergence, structural changes, technological change and policies. Currently, the majority of circular-economy policies are taxes and fees. It is hard to model the impacts of some policy changes, especially things like recycling targets and labelling that are hard to incorporate into economic variables. He concluded by voicing the opinion that the case study approach that was used in the project can provide good policy insights in combination with results from macroeconomic models.

Jinxue Hu, an Economic Researcher at NEO International, presented some figures from the literature. One study shows that the world economy is currently only 9% circular. Another study has modelled an ambitious scenario where many circular-economy policies are implemented in the EU, including policies to encourage an environmental tax shift, reduction of food waste, recycling quotas for metals, etc. In this scenario, GDP would only be brought down slightly, by 0.3% compared to a scenario where no action is taken, a relatively low cost compared to the environmental benefits achieved. This is because the economic costs could be largely offset by the positive effects of labour tax reduction on EU competitiveness. One key insight is that due to the expected economic growth, even if we achieve a circularity of 50% by 2050, given that, according to the International Resource Panel, material consumption levels in the future will double, we will still need the extraction rates that we have today.

Geert Woltjer, Senior Researcher at Wageningen Economic Research presented insights on the project's examination of the macroeconomic modelling of scenarios. He pointed out that scenarios are typically either opportunity-, policy- or target-based and that each of these has different implications for the results and their usability for policymaking. He outlined the mechanisms through which circular-economy transitions can impact the key economic variables of employment, GDP, environment and welfare. He pointed out that baseline scenarios rarely

include resource-scarcity effects, even though resource scarcity is one of the key concerns motivating circular-economy transitions. Lastly, he argued that the effects of circular-economy transitions should be assessed with a measure of welfare broader than that encapsulated in GDP.

Key issues raised during the discussion

Question: In regards to the broader welfare concept, i.e. not just using GDP as an indicator, could this realistically be taken up into macro-economic models and the European Semester?

Answer: The GDP indicator is preferred by finance and economic ministries and this is why it is still used in existing models and assessments that try to assess the economic benefits of environmental policies.