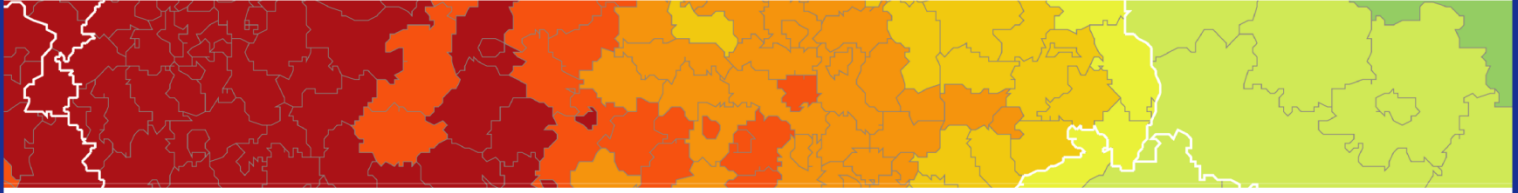


Inspire policy making by territorial evidence



CIRCTER – Circular Economy and Territorial Consequences

Applied Research

Final Report

Reading guide

Version 09/05/2019

Final Report

This applied research activity is conducted within the framework of the ESPON 2020 Cooperation Programme, partly financed by the European Regional Development Fund.

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway and Switzerland.

This delivery does not necessarily reflect the opinion of the members of the ESPON 2020 Monitoring Committee.

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Reading Guide

This document provides an overview of the structure and contents of the **Final Report of the CIRCTER project**. The CIRCTER Final Report is delivered as a set of **13 documents**, all of which are available for download from the project website (www.espon.eu/circular-economy). The **documents** bundled into the CIRCTER Final Report include:

Reading Guide: This document

Main Report: This report has been contributed by all the research team and edited by Tecnalía Research and Innovation (Spain). The report provides an overview of the main findings from the different research tasks in the CIRCTER project and delivers selected policy messages with European coverage. The report provides: (Sec. 2) a territorial definition of the circular economy; (Sec. 3) insights into the available statistics on material and waste patterns and flows and their interpretation, alongside new territorial evidence on both aspects; (Sec. 4) a sectoral characterisation of the circular economy at regional level (NUTS-2), including data on turnover and jobs; (Sec. 5) key findings from the CIRCTER case studies; (Sec. 6) a systemic interpretation of the circular economy that works as a knowledge-integration mechanism for the entire report; (Sec. 7 and 8) an analysis of the most relevant circular economy policies and strategies at various territorial levels; (Sec. 8) a subset of policy recommendations focusing in particular on territorial and cohesion policies, and; (Sec. 9) suggestions for further research.

Synthesis Report: This document summarises the key messages emerging from the different research task of the project. The report mirrors the structure of the Main Report and recaps the key learnings and policy messages in less than 15 pages.

Annex 1: A territorial definition of the circular economy: This annex, authored by Tecnalía Research & Innovation (Spain), draws on the territorial definition of the circular economy. It provides a theoretical and practical definition of the circular economy based on a selection of territorial factors conditioning the development of local and regional closed-loop systems.

Annex 2: Material and waste patterns and flows in Europe: Data regionalization: This document, also produced by Tecnalía Research & Innovation (Spain), describes the criteria and the methodological approach adopted to regionalise 14 datasets on material patterns and flows. The report discusses the information currently available from Eurostat and provides a thorough explanation of the methodology adopted to regionalise the data down to NUTS-2 level, including its shortcomings and limitations. The report also presents a series of maps illustrating the regionalised indicators.

Annex 3: Material and waste patterns and flows in Europe: Territorial analysis: This annex, elaborated by Wuppertal Institut (Germany), focuses on the interpretation of the regional statistics on material and waste patterns and flows presented on Annex 2. The document delivers a territorial analysis looking at material and waste intensity measured in per

capita and per GDP unit. Material types, waste categories and waste management practices are also analysed. Moreover, an analysis of economic and employment decoupling from material consumption and waste generation is provided as well.

Annex 4: A sectoral characterization of regional circular economies in Europe: This annex has been developed by Prognos (Belgium). The document characterises the territorial relevance of circular economy activities across the ESPON space by analysing the regional distribution of selected sub-sectors and economic activities. The characterization is done in terms of employment and turnover, for companies operating in sub-sectors typically linked to a circular economy and/or adopting circular business models. An illustrative analysis focused on potential users of renewable energy and secondary materials is also included. The approach, data sources and outcome indicators are thoroughly explained in the report as well, which concludes by delivering selected policy messages.

Annex 5: Case Study synthesis report. This annex, authored by Tecnalia Research & Innovation (Spain), provides an overview of the key findings from the case studies conducted in the CIRCTER project. The report also illustrates the criteria adopted for the selection of the study areas and provides a detailed explanation on the methodology adopted to perform the analysis. The document links the case studies back to the territorial factors in the project and provides relevant information for the elaboration of the policy recommendations based on practical experiences from different regions and cities.

Annex 6: Individual case study reports. This annex presents the individual case studies in the CIRCTER project, namely:

- Scotland - Circular economy strategy “Making Things Last” (by Prognos, Belgium)
- Maribor - The WCYCLE strategy (by ACR+, Belgium)
- Brussels - Regional Plan for a Circular Economy 2016-2020 (by Technopolis, Belgium)
- Basque Country circular economy initiatives (by Tecnalia Research and Innovation, Spain)
- Sicily - Industrial symbiosis platform (by KnowlEdge, Italy)
- Central Germany - The Bioeconomy Cluster (by Wuppertal Institut, Germany)

Annex 7: A system’s perspective on the circular economy. This annex is authored by KnowlEdge (Italy). By developing a series of systems’ maps, the document builds a narrative for the circular economy based on the integration of the knowledge developed across all the research activities in the project. Integration allows knowledge to be elicited, building a shared understanding of the key drivers of change for circular systems. The approach also contributes to validate the relevance of the territorial factors for the development of local and regional circular economies. Ultimately, the document allows to discern on the possible outcomes of circular policies and strategies across sectors and territories.

Annex 8: Towards place-sensitive policies for circular economy development: This annex, developed by Technopolis (Belgium), addresses the policy dimension of the circular economy. The report analyses the most relevant policies defining the circular economy

agenda at European level. The report illustrates the various ways in which EU policies affect circular economy. These range from hard interventions aiming at the extension of the lifespan of products and materials, to softer strategies relying on e.g. voluntary agreements, environmental labelling or circular procurement. The annex also addresses the overlaps between circular economy policies and cohesion and territorial ones. The document concludes by providing an exhaustive set of policy recommendations for circular economy development aimed at various territorial levels.

Annex 9: Policy fiches: This annex, elaborated by Technopolis (Belgium), includes a set of 16 policy fiches exemplifying various circular economy interventions characterized under a harmonised template. Interventions include policies, strategies, measures and projects at various levels. The fiches illustrate examples ranging from EU directives down to local community projects.

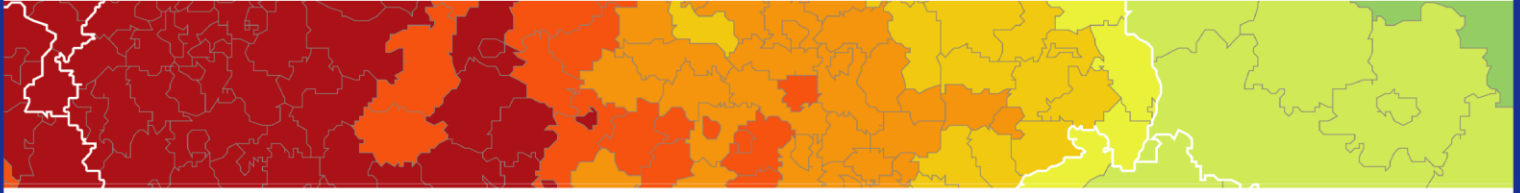
Annex 10: Measuring urban circularity based on a territorial perspective: This document has been prepared by Wuppertal Institut (Germany) as a direct contribution to the Partnership on Circular Economy of the Urban Agenda of the EU (<https://ec.europa.eu/futurium/en/circular-economy>). One of the priority areas defined in its Action Plan for the 2018-2019 period is to Develop City Indicators for Circular Economy. The annex presents an overview of the conceptual frameworks that can be adopted to develop indicators for tracking progress towards a circular economy and then goes on with an analysis of potential governance indicators that can be defined to support circular economy transitions at the urban level. Eleven indicators are proposed in total. The report concludes by reflecting on how practitioners may deal with data availability and territorial specificities while developing circular economy indicators.

Annex 11: CIRCTER Policy Guide: The policy guide of the CIRCTER project has been developed by Technopolis (Belgium) based on all the research findings in the project. The CIRCTER Policy Guide provides a multi-faceted tool that aims to help local and regional policy makers develop policies to facilitate circular economy transitions by creating favourable framework conditions. The main goal of the guide is to assist policy makers in the design of policies that are “fit-to-territory”, i.e. that vary depending on the characteristics of each region or city. Policy formulation processes are supported by the definition of a stage-based procedure that is also underpinned by a relevant set of examples and other useful resources.

CIRCTER dataset: Together with the above documents, the core **CIRCTER dataset** developed in the project has also been made available for download from the ESPON Database Portal (<https://www.espon.eu/espon-database>). This dataset is composed by a set of **nine territorial indicators** computed at two different time cuts, namely:

- Domestic Material Consumption (DMC) in thousand tonnes (2006 and 2014)
- Domestic Extraction (DE) in thousand tonnes (2006 and 2014)

- Total waste generation, excluding major mineral wastes in metric tonnes (2006 and 2014)
- Circular economy material providers (employment) in number of persons employed (2010 and 2015)
- Circular economy material providers (turnover) in Million Euros (2010 and 2015)
- Circular economy technology Providers (employment) in number of persons employed (2010 and 2015)
- Circular economy technology Providers (turnover) in Million Euros (2010 and 2015)
- Circular economy business models (employment) in number of persons employed (latest available year; 2018 and previous)
- Circular economy business models (turnover) in Thousand Euros (latest available year; 2018 and previous)



ESPON 2020 – More information

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