BIO CIRCULAR CITIES
Exploring the circular bioeconomy potential in cities

Biocircularcities in brief #3
June 2023

The project is entering its last phase, with the final analyses and discussions among local stakeholders in the three pilot territories. Different life-cycle analyses and life-cycle costs studies were applied to the three value-chains at stake: the improvement of municipal biowaste collection to capture more and less contaminated fractions in Barcelona and the injection of biomethane in the gas grid, the recovery and processing of coffee silverskin from local agrifood industries in the area of Napoli to make high-fibre content bread, and the collection and transport of forestry residues in the Province of Pazardzhik in Bulgaria for lignocellulosic or energy recovery.

The analyses showed that for all three value-chains, high environmental benefits could be expected, and that the associated economic savings are significant. Local stakeholders found the assessment results essential, especially regarding environmental permits and authorisations. Environmental factors were regarded as equally important as legal and economic ones.

The consortium is now working on the first version of the Biocircularcities Webtool, which will provide suitable technological pathways for biowaste recovery. Guidelines to make all key outcomes available for replication are also under preparation. These different results will be presented during a series of webinars to be held in the coming months.

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Regulatory gaps and opportunities for a biocircular economy

The analysis of regulatory drivers and barriers for a circular bioeconomy found that, at the European level, support is mainly given to biorefineries that process secondary raw materials into a range of marketable bio-based products, including biochemicals, bioplastics, (novel) food and feed, and bioenergy. This was also found to be true for the selected streams of the BCC pilot territories.

Drivers

- binding EU targets for Member States on municipal solid and biowaste
- taxes and bans on landfilling; incineration and fossil fuels;
- sustainable public procurement of biobased products.

Barriers

- complicated administrative authorisation processes;
- lack of business models for biowaste-based products;
- too high collection and treatment costs compared to the value of the produced outputs.

For more, read the report "Regulatory gap and opportunity analysis for a circular bioeconomy" and its summary!

The Biocircularcities guidelines to facilitate the replication of the pilots' experiences

Partners are working on guidelines to facilitate the replication of the pilots' approaches. Available through a web application, they will address the needs of public and private decision makers along the Biocircularcities biomass waste value chains and shall be replicable to different types of biomass waste, given any geographical, political and socio-economic contexts. The guidelines intend to screen the socio-economic, political and environmental context of the territory in which the value chain shall be implemented, and to evaluate which technological pathway(s) for the biowaste valorisation would be potentially compatible with the described surrounding context.

Read the report "Definition of the Scope of Circular Bioeconomy for biowaste management in urban areas" to understand the approach followed by partners to prepare the guidelines.

Peer Review meeting #3 in 3 take-aways

6 external experts shared insight on the results of the third Living Labs (LL). Here are their main conclusions.

1. When conducting a life-cycle assessment and life-cycle cost analyses, the method used must be clearly justified and results must be put in perspective, so that the end-users can reach the proper conclusions
2. It is important to examine the binding obligations set by the regulation before conducting a life-cycle assessment to avoid repeating or going against the legal obligations with the conclusions.
3. There is a need for the scientific community to be more connected with the decision makers to better support policy decision, and support them with the interpretation of results.

More on the Peer Review session #3

The webtool to support the identification of the most suitable technological options for improving the biowaste management is on its way.

Try it now!

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