CIRCULAR BIOCARBON

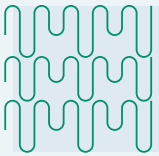
Turning urban waste streams into value–added products

circularbiocarbon.eu

CIRCULAR BIOCARBON presents a first-of-a-kind flagship biorefinery designed to valorise Organic Fraction of Municipal Solid Waste (OFMSW) and Sewage Sludge (SS) into high added-value end products. The biorefinery will turn organic waste streams generated in a city into added-value products for industries and end-consumers.

Carbon feedstock from the city

Organic Fraction of Municipal Solid Waste (OFMSW)

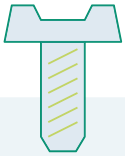


Sewage Sludge (SS)

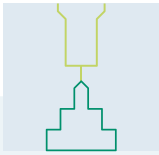
Biorefinery

Added–value end products

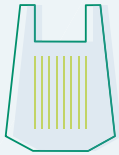
Coating of direct consumer products



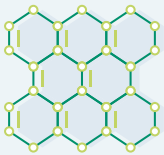
Coating of mechanical moving parts



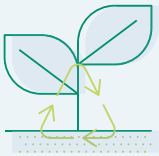
Coating of plastic moulding tools



Biodegradable and compostable waste bags

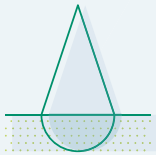


Green graphene-based devices and products



Biodegradable in soil mulch films

Solid organomineral fertiliser with biostimulant properties



Liquid biobased biostimulant

The recycling of waste has significantly improved in the past decades, but a large part of the organic fraction contained in the Municipal Solid Waste (MSW) is still incinerated or sent to landfills. The **CIRCULAR BIOCARBON** biorefinery will manage the municipal organic waste more efficiently, by creating green bio-based materials and marketable end products through a pool of cascading innovative technologies.

CIRCULAR BIOCARBON supports the new Circular Economy Action Plan for Europe by demonstrating the feasibility, at a commercial level, of a biorefinery of this kind. Running from 2021 to 2026, the **CIRCULAR BIOCARBON** project represents a milestone for Europe, both in terms of its implementation scale (industrial level) as well as for its replicability potential. Furthermore, it aims to open up the market for new products and business frameworks, enabling in part the transition in Europe from a linear to a circular economy.

Expected impacts

Reduction of OFMSW

4 new bio-based materials

Reduction of Greenhouse emissions

Reduction of the incineration of SS

4 new bio-based value chains

Jobs created by 2030

7 new cross-sector interconnections

More new patents by 2030

9 new building blocks

Cities

The **CIRCULAR BIOCARBON** biorefinery will be implemented in two locations: Zaragoza (Spain) and Sesto San Giovanni (Italy). In both sites, the biorefinery will be operated for three years. In Spain, the biorefinery will be established by URBASER in collaboration with SOCAMEX, while in Italy will be performed by CAP.

Multi-location implementation supports and ensures the replicability of the concept by testing it against different waste management schemes, ecosystems and practices in different territories. This also helps replication potential by other cities, as well as targeting preferred markets and acquiring key customers faster in each country.

Zaragoza (Spain)

Sesto San Giovanni (Italy)

How you can get involved

Join our city interest group

Alongside the two host cities, the **CIRCULAR BIOCARBON** will recruit five to ten cities to join the City Interest Group. Members of this group will have the opportunity to take part in four study visits, peer-to-peer exchanges, and gain insider knowledge on breakthrough innovations in the field of biowaste valorisation.

Take part in our workshops & webinars

During the project, two replication and training workshops will take place across Europe, focused on the challenges associated with implementing new life-cycle and sustainability assessment tools and approaches to planning in a local government setting. In addition, a series of webinars on the **CIRCULAR BIOCARBON** approach will be organised bringing in other topic-related projects, as well to share progress and results, and encourage exploitation.

Sign up for our latest updates

To keep up-to-date with the latest development of **CIRCULAR BIOCARBON**, sign up online to receive an e-update delivered to your inbox three times a year!

Get in touch with us at:

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CIRCULAR BIOCARBON

Meet our partners

The project involves 11 partners from five European countries (Spain, Italy, Denmark, France and Germany) and is coordinated by global environmental manager URBASER.

CIRCULAR BIOCARBON has an overall budget of 22.952.297,50€, with a EU contribution of 14.999.999,75 €, through Bio-based Industries Joint Undertaking (BBI JU). Established in 2014, BBI JU aims to implement the Strategic Innovation & Research Agenda (SIRA), developed by industry in collaboration with the EU to realise a bio-based economy and reach its target of being climate-neutral by 2050 — an economy with net-zero greenhouse gas emissions.

urbaser

socamex

GRUPPO CAP

CemeCon Scandinavia A/S

Graphenea

NOVAMONT

GROUPE ROULLIER

ICLEI Local Governments for Sustainability EUROPE

Beta Biodiversitat, Ecologia, Tecnologia Ambiental i Alimentària

UVIC UNIVERSITAT DE VIC UNIVERSITAT CENTRAL DE CATALUNYA

UVa iSP Institute of Sustainable Processes

UNIVERSITÀ POLITECNICA DELLE MARCHE

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BBI JU

Bio-based Industries Consortium

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