

CITISYSTEM





# **CITISYSTEM 2<sup>nd</sup> Newsletter** Supporting cities in sustainable biobased systemic change

Biowaste is one of the largest material flows in European cities. A central concern is how to utilise bioresources and biomass in a circular way.

According to the waste hierarchy, after prevention; re-use, recycling, and energy use are the preferred options, however, quite a large amount of biobased waste is disposed. Biowaste has a high potential for contributing to circularity, delivering valuable soil-improving materials, fertiliser, and biogas. With a share of 34%, biowaste is the largest single component of municipal waste in the EU. Recycling of biowaste is key to meeting the EU target to recycle 65% of municipal waste by 2035.

Valuable resources for both material, energy and nutrition are lost through under-utilisation of bioresources, e.g., biowaste disposed of in the mixed municipal waste.

The importance of supporting the utilisation and circulation of biobased materials in nutrient and energy loops is more important than ever. Involved project partners share the desire to develop circular bioeconomy on system and stakeholder levels in cities. Systemic solutions include effective and innovative ways to organise the policies to support circular bioeconomy, circulation of bioresources, separate biowaste collection and processing, as well as the most effective utilisation of biowaste.

#### Lead partner:

LAB University of Applied Sciences

#### Collaborating with:

- City of Lahti (Finland)
- Technical University of Košice (Slovakia)
- BSC, Business support centre L.t.d., Kranj (Slovenia)
  Give a Marshalara (Balainara)
- City of Mechelen (Belgium)
- Regional Development Fund of Central Macedonia (Greece)
- CERCA Institute-Catalan Research Centres Institute (Spain)

The total budget of the EU Interreg Europe co-funded project is 1 476 343€ out of wich 1,18M€ is ERDF.

**The project lasts** four years (core phase 2023–2026 and follow-up 2026–2027).



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# Terminology

# Supporting cities in sustainable biobased systemic change

- "Sustainable development is development that meets the needs of the present, without compromising the ability of future generations to meet their own needs."
- Environmental, Economic, Social, Cultural

Source; World Commission on Environment and Development: Brundtland's report, un.org, europa.eu

## **Biobased products**

 are wholly or partly derived from materials of biological/living origin

Source: environment.ec.europa.eu

## System level or systemic

- addressing the root causes, rather that the symptoms
- fundamental, affecting the whole system
- simultaneous change of operating models, structures and their interactions, which creates conditions for future sustainable development

Source: eea.europa.eu, ilo.org, sitra.fi

# <image>

# What do we mean with biobased materials?



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# CITISYSTEM's 2<sup>nd</sup> Interregional Meeting in Barcelona as Showcase of Sustainable Urban Solutions



## WELCOME TO THE NEW URBAN ERA

The CITISYSTEM project held its **2<sup>nd</sup> interregional meeting** in Barcelona on 8.-9.11.2023, bringing together partners and stakeholders from six countries to discuss innovative approaches to waste management and sustainable urban development.

The gathering commenced leading attendees on insightful site visits across Barcelona's metropolitan area. The first destination was Sant Adrià del Besòs Ecoparc, a municipal waste centre under the TERSA group. TERSA, a public company dedicated to circular economy-related environmental services, manages all waste from the Barcelona metropolitan region. The Ecoparc recovers over 316,800 metric tons of waste from unseparated mixed waste (grey bin), producing more than 181,900 MWh of electrical energy and127,900 metric tons of steam for district heating and cooling systems. Organic waste is previously separated from non-organic waste, and it undergoes a biological treatment capturing 20,800,000 Nm<sup>3</sup> of biogas used to generate 26.900 MWh of electricity.

The second stop was the Granollers Biowaste plant, processing the organic fraction of municipal solid waste from around 900 000 citizens. Recovering 52,000 tonnes annually, the plant transforms waste into 6,000 tonnes of compost and 4,500,000 Nm<sup>3</sup> of biogas. The biogas undergoes an industrial upgrading process to become biomethane, a clean and renewable energy source for urban and interurban buses, as well as electricity and thermal energy. The visits emphasized the importance of waste reduction, increased recycling, and highlighted ongoing efforts towards a greener society.

#### **Read more:**

LAB FOCUS: Biowaste study visits in Barcelona

LAB FOCUS: Bioeconomy and biowaste management in Catalonia After the visits, participants reconvened at CERCA's premises to share expertise, discuss good practices, policy status, and delve into bioeconomy-related topics.

The second day of the Interregional Meeting featured a visit to the esteemed Smart City Expo. The group embarked on a VIP tour spanning initiatives from Portugal to Singapore, showcasing cutting-edge projects centered around the biocircular economy for enhancing urban life worldwide.

The concluding meeting gathered CITISYSTEM members and interested parties from Catalan waste management and recycling institutions. Presentations from CERCA's director Lluís Rovira, lead partner Katerina Medkova from Lahti, and representatives from the Catalan Biowaste Agency and Catalonia's Climate Action Department provided valuable insights. The event concluded with a dynamic round-table discussion, leaving participants invigorated and motivated to continue working towards creating healthier and more sustainable cities for future generations.



"The best part of the CITISYSTEM visit to Barcelona were the visits to local recycling companies as well as presentations and discussions with representatives from other countries in the project. It was a pleasure to notice that we have many processes related to municipal waste management in good shape in Finland."

Rinne Kimmo, Salpakierto Oy, Finland

"Increasing biogas production was seen as an important part of a well-functioning circular economy and companies were ready to invest it."

Niko Wassholm, LABIO Oy, Finland



# **CITISYSTEM - Good Practices**

During the CITISYSTEM kick-off meeting, the project partners and stakeholders worked together to define what a Good Practice (GP) within the project could be.

#### In terms of CITISYSTEM, a GP can be:

- practices
- tools & solutions
- (e.g., technology, digitalization, software)
- cooperation models
- ecosystems
- change in regulations/legislation
- educative actions

# We have published **5 Good Practices**

#### DE **Development and Monitoring** an integrated system of separate blowaste stream at 38 Municipalities. FoDSA CM undertook to provide the opriate instruments, materials, ods, and equipment to organize mplement a separate biowaste tion progra

30 Jan 2024 | By project CITISYSTEM

on of food waste as

NGOs have organized the food aid work in the City of Lahti and nearby

Utilizati food aid

## Next, we brainstormed on the related Interreg Europe GP features, e.g.:

- an initiative related to regional development policies (e.g., project, process, technique)
- proved to be successful (tangible and measurable results)
- transferable: interesting to other regions
- preferably achieved through public funding,

### and we listed also CITISYSTEM specific features to support our selection to be:

• city (or region) level

.... . . . .

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promoting sustainability

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- · related to biobased resources and processes
- · systemic ('change of operating models, conditions for future sustainability')



C Expert approved

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Innovative biochar-based

Jtilizing circular economy for itchen, agri, and industrial was ind transforming it into green energy and regenerative soil ubstrate.

07 Feb 2024 | By project CITISYSTEM

approaches to soil regeneration and fertilisation

22 Dec 2023 | By project CITISYSTEM 12 Dec 2023 | By project CITISYSTEM C Expert approved



Digital monitoring service for climate, circular economy and other environmental strategies and action plans in the city of Lahti 10 Nov 2023 | By project CITISYSTEM Expert app

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# Interreg Europe Training Days 2023

**CITISYSTEM** Lead Partner participated in an intensive 3-day training and networking event organized by Interreg Europe in Lille, France, in September 2023.

## Read more







## **Policy situation**

The importance of circular bioeconomy actions rising in the regional and local policies and procedures in Lahti.

The Green Transition Program in the Päijät-Häme region is under preparation by the Regional Council of Päijät-Häme. We have had the opportunity in workshops and commenting phase to bring insights to the theme of Sustainable Food System about bioeconomy, reduction of food waste and development of food aid. The work to promote Lahti Circular Economy Roadmap has progressed to the phase that the actions have been described in detail in the public Environmental Watch service (Lahden ympäristövahti (lahdenymparistovahti.fi)), the measures have been defined by contact persons who have been trained to use the platform and the work in identifying suitable indicators has started.

Lahti Environmental Watch service has been identified as one of the CITISYSTEM Good Practices.

Read more about Lahti Environmental Watch

#### Stakeholders in Finland met to tackle food waste challenge

The third stakeholder meeting was held on the 20<sup>th</sup> of October in the City of Lahti. Our theme was **"From food waste to food Aid for those in need"**.

In Lahti there are NGOs which have developed an organized way to deliver food aid to people in need. The NGO called the Operation Open Door makes a contract with, for example, grocery stores, so that they can receive their donations of edible food, which in the grocery stores are labeled as food waste.

The NGO receives about 85 000 kg of edible food waste per month. Operation Open Door collects and stores donations from different companies in cold storage and passes them on to food distributors. These distributors can then deliver about 17 000 food packages per month to people in need. Beneficiaries are both organizations which also distribute edible food, and for people who are in need of food aid.

Read more about the meeting

#### "Cooperation is key in reducing food waste", showcased at Lahti event

Lahti's goal is to be a waste-free circular city by 2050. To promote the circular economy, all actors need to be involved. A joint discussion session with about 30 participants which dealt with reducing food waste and making better use of usable food was held at the city hall on February 21<sup>st</sup>.

One of the smart specialisation spreadheads in the Päijät-Häme region is food and beverage, which shows that the development of the regional food system is seen important. At the event, a model example of food aid operation was presented by the Shared Table in the city of Vantaa. The Lahti Diaconia Institute presented a project that promotes employment and supports food aid activities, with preparation of its own operating model



for Lahti. The Welfare Area of Päijät-Häme is currently piloting multi-functional cooperation in food aid activities.

Among the good solutions on display were free surplus food that the Regional Provider of Vocational Education and Training for Lahti Region provides for its students, as well as the local retail operator Osuuskauppa Hämeenmaa who continuously develops ordering systems, product price reductions and cooperation with food aid operators. Operation Open Door is a very important supplier of food aid in the region, whose operation is based on active volunteering.

**Operation Open Door** has been identified as one of the CITISYSTEM Good Practices.

#### **Read more about Operation Open Door**

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"To reduce food waste and create a more sustainable food system, it is important to have extensive cooperation between the third sector, companies, and public actors", sums up Päivi Sieppi. Environmental Advisory Manager from the City of Lahti.

The discussion, organized by the City of Lahti and LAB University of Applied Sciences, was part of the EU co-funded CITISYSTEM project, which promotes the systemic change of the circular bioeconomy in cities.







# **SLOVAKIA**

Regarding to the policy situation, we started to have more interactions with various actors within cities, including NGOs, consultants for circular solutions or public institutions. We started communication on possibility of different biowaste solutions within municipalities and facilitating partnerships based on geographic proximity for municipalities to share costs and profits together. We see that this might end up with a new project idea.

Technical University in Košice, Košice Self-Governing Region and Regional Centre MIRRI SK co-organized CITISYSTEM educational seminar connected with discussion (and good coffee) for representatives of municipalities and towns of Košice and Prešov Self-Governing Region. The content was a presentation of good practices in the field of decarbonisation, energy independence, waste management and innovative technologies (biogas plants, composting plants, etc.) with applications in Finland, Spain, Greece, which can save municipalities not only finances.

#### **Event program:**

- What are the opportunities for decarbonisation, energy independence in municipalities? What can be implemented in your municipality?
- How to manage biowaste in our municipalities?
  What do we need to rethink?
- Funding opportunities and current/future calls for relevant projects - MIRRI SR
- CYRKL waste marketplace
- Raising awareness about waste working with citizens - examples of good practice
- Examples of EU projects at TUKE as options for municipalities - DECA, CITISYSTEM, CITYCIRCLE, SMART CIRCUIT, CIRCOTRONIC etc.
- Teaser what awaits you in Mechelen if you join us on the excursion?

#### Discussion

The discussion was fruitful and showed how diverse the problems in municipalities are. The most interesting parts of presentations for attendees were mainly infographics with economic profitability calculations for various sustainable solutions (best practices in EU). Several of them want to attend 3<sup>rd</sup> interregional meeting in Mechelen. Looking forward to seeing them there!









Picture: Technical University in Košice, Košice Self-Governing Region





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# **SLOVENIA**

## **Stakeholder meeting**

The second stakeholder meeting in Gorenjska, Slovenia was held on 01.02.2024 in the premises of the Communal company Kranj. The themes were: **how to develop circular approaches in biowaste** and **learnings from meeting in Barcelona.** 

BSC Kranj shortly presented the project and findings from Barcelona site visit, while Communal company Kranj presented the challenges connected to biowaste in the region. The vivid discussion followed, the different aspects of biowaste, usage of bio materials and different challenges connected to circularity with biowaste and bio materials were addressed.

Participants were very pleased with the presentation of the project, they were glad to hear about good practices from Barcelona, that presented the valuable inputs for further ideas for development of biowaste circularity in the region Gorenjska. Specifically, the diverse challenges connected to gathering, biowaste quality, pricing, and possibilities to develop biowaste facilities were discussed and considered.

At the end of the meeting, participants expressed their support to futher exchange of info and further cooperation in the field of the circularity of biowaste. They also support very much the exchange of info, knowledge and know-how of regions in CITISYSTEM.





# BELGIUM

## The latest policy situation in Flanders

Flemish regulations on the sustainable management of material cycles and waste are stipulated in the Flemish Government's Materials Decree (2011) and the VLAREMA (2011).

The VLAREMA was recently under revision and the latest update from July 2023 (VLAREMA 9) bans single-use plastics. With effect of 1.1.2025 fruit stickers will no longer be allowed. Even industrially recyclable stickers will no longer be tolerated, only the use of home compostable stickers will be permitted. There will also be a ban on plastic waste and compost bins, plastic cups and containers for catering and plastic wrapping around unaddressed advertisement. The rules on the incineration of household waste will become stricter and the government also wants to combat street litter by the obligation of selective collection containers just outside takeaway establishments.

Based on the legislation that is described in the Materials Decree and VLAREMA the Local Materials Plan (OVAM, 2023) was published by the Public Waste Agency (OVAM). The Plan is a follow-up to the Implementation Plan for household waste and similar industrial waste for 2016-2022. It builds upon the work done in the previous period, while also introducing some major innovations. With this implementation plan, the OVAM is taking another step towards an integrated policy for the circular economy, by paying more attention to prevention and reuse and by further closing material circuits. This plan was approved by the Flemish government on 26.5.2023 and was submitted to the European Commission as the waste management and prevention program as determined in Art. 28 and 29 of the European Waste Framework Directive (2008/98/ EG - EEU 2018/851). In 2021 OVAM, also published the action plan Circular Food Loss and Biomass (Residual) Flows 2021-2025. This action plan will encourage the prevention, the separate collection and recycling of food loss and biomass residues in order to, amongst others reduce costs and resource use. This plan offers a framework for the government and stakeholders to close the loop of food loss and biomass (residual) flows and to reach the Flemish and European targets in the period 2021-2025.

#### Separate collection of biowaste from households in Mechelen

The obligation for citizens and all companies to separate biowaste at the source from 1.1.2024 is translated into practice with the implementation of the selective collection and processing of household biowaste by local authorities. In September 2023, the city board of Mechelen have officially approved the transfer of management of collection and processing of biowaste from households to the intermunicipal waste company IVAREM. IVAREM requested and received an exemption for implementation from the Public Waste Agency (OVAM) until 1.1.2026. In the meanwhile, the city of Mechelen together with IVAREM are thinking of solutions tailored to the needs of the city. On top of the separate collection of the household biowaste the city wants to provide multiple solutions for its citizens with a focus on closing local nutrient cycles. Composting at home is a good practice supported by the city for decades. Community gardening is also supported by the city. This latter can serve as a solution for people with less space and less opportunity to compost at home. Both activities also brighten up underused areas in the city and bring people together. Moreover, they remind adults and children that live in an urban area how food is grown and how nutrient cycles can be closed efficiently.

Picture: City of Mechelen



#### Kick-off biowaste collection for the hospitality sector in Mechelen

To comply with the new regulations regarding the separate collection of biowaste for households and small enterprises, the city of Mechelen launched a competition for funding. The winning consortium (Waste2Energy) will set up a pilot to collect and process the biowaste from the hospitality sector in a more organized way than was done in the past.

Read more

## Second stakeholder meeting

In the beginning of November 2023 Flemish policy experts were brought around the table and shared their knowledge on the circular bioeconomy in Flanders. Relevant legislation was discussed, import event data was shared and a list of good practices in Flanders was created. Experts from the Public Waste Agency (OVAM), Circular Flanders, the Flemish department of Economy, Science and Innovation (EWI), the Flanders Innovation & Entrepreneurship institution (VLAIO) and the Association of Flemish cities and municipalities (VVSG) engaged in the meeting. The CITISYSTEM project and the opportunities for a local bioeconomy were also enthusiastically received by the colleagues and alderman at the city of Mechelen during the climate steering group in December.

## EU presidency 2024 in Flanders

Flanders will carry the EU presidency in 2024 and a lot of exciting activities are on the program! Next to energy transition and digital transition, circular economy (more specific bio-economy and circular manufacturing industry) is one of the larger thematical focusses. In March, there is the Open Food Conference in Leuven (11.–13.3.), the Bioeconomy changemakers festival in Brussels (11.–17.3.) and the Flanders Technology and Innovation congress in Hasselt (17.–21.3.). On 17.4., the delegation of the World Circular Economy Forum (WCEF) 2024 will visit the circular hubs in Mechelen. We are also extremely excited to receive the CITISYSTEM delegation in Mechelen from 24.–26.4.! Together we will visit a bio-economy market at one of our circular hubs and the Climate Congress on the 26.4.





Picture: RDFCM

## **Policy Situation**

During Semester 2, entitled **"Good practices in system-level biobased circularity solutions**", the Regional Development Fund of Central Macedonia (RDFCM) is in procedure of finding solutions on the challenges we face at system and stakeholder levels in our region, one of the six CITISYSTEM partner cities/regions.

RDFCM is in communication with Region of Central Macedonia's (RCM) stakeholders and especially with the Regional Association of Solid Waste Management Agencies of Central Macedonia (FoDSA CM) and the RCM, which is the Associated Policy Authority, for the identification of Biobased challenges that have emerged through the results of the CITISYSTEM survey.

## **Regional Dissemination Event**

RDFC organized the 1<sup>st</sup> CITISYSTEM Regional Dissemination Event on 23.2.2024, in Thessaloniki. The event, in which 38 Municipalities of the region were invited, was attended by the Vice Governor, the President of the Regional Association of Solid Waste Management Agencies of Central Macedonia (FoDSA CM) and representatives of the Region of Central Macedonia (APA), FoDSA CM, Municipal Representatives, Vice Mayors, representatives of Scientific Bodies as well as a number of executives of involved bodies.

The RDFCM team presented CITISYSTEM, mentioning the milestones and the most important actions that took place during the first year of the project's implementation, such as the Kick-off meeting in Lahti, Finland, in May 2023 and the 2<sup>nd</sup> interregional meeting in Barcelona, Spain, in November 2023, in both of which study visits were carried out. In addition, an open invitation was addressed to the audience to attend the interesting CITISYSTEM Thematic Webinars.

Then, the "Kafe Kados" (Brown Bin) Program was presented by FoDSA CM officials, covering the thematic sections of the provisions of the institutional framework for separate collection of biowaste and the implementation of the system of separate collection of biowaste in the Region of Central Macedonia. The event concluded with the speech of Vice Mayor of Veroia, who presented the successful example of the Municipality of Veroia in the field of circular economy. In the end took place a dynamic exchange of ideas and insights during engaging discussions centered around the current state and the actions needed to improvement of the all the sectors involvement (households, hotels, producers etc.).

## **Stakeholder Meeting**

The 2<sup>nd</sup> Regional Stakeholders Group Meeting was organized on 23.2.2024, attended by the representatives of the Region of Central Macedonia (APA), the Regional Association of Solid Waste Management Agencies of Central Macedonia, the Thessaloniki Chamber of Commerce and Industry, the Centre for Research and Technology Hellas and more.

A brief overview of the progress of the CITISYSTEM project so far was made. A fruitful discussion followed between the participants and relevant feedback from the members of the Regional Support Group. Good practices were then presented, giving emphasis to the "Kafe Kados" (Brown Bin) Good Practice, as well as the challenges, opportunities and possible solutions regarding the separate collection of biowaste in the Region of Central Macedonia. Also, the invitation to the upcoming 3<sup>rd</sup> Thematic webinar was shared.

### **Other events**

RDFCM, perceiving the importance of circular economy and posing its implementation as one of the priorities, participates in both Training and Certification events.



# SPAIN



### **Policy Situation**

The state of Catalan policies is currently changing. The Catalan Waste Agency is drafting a new waste management law that promotes actions towards circularity. On account of the climatic emergency we're facing and the European targets that must be reached by 2035, its objectives are ambitious: the law will tackle waste prevention and management, and a more efficient use of resources, and will put a especial focus on implementing more efficient separate collection systems in large cities and densely populated municipalities, and managing the organic fraction of municipal waste.

## **CERCA Stakeholder group meetings**

The first CERCA hybrid meeting with stakeholders of the 2<sup>nd</sup> semester took place on the 31<sup>st</sup> of October 2023. Three CERCA members met with eight members of CERCA centres focused on researching sustainability, ecology, bioeconomy and other subjects related to taking better care of the environment (IREC, BETA Centre, CREAF, ICRA, IRTA, ICIQ and CTFC).

The meeting was very fruitful: CITISYSTEM's objectives were discussed, several Good Practices that could potentially be useful for the other partners were identified, and other actions that aren't yet being implemented but could benefit the project were put on the table to be thought over.

Following this first hybrid meeting, CERCA had an online meeting with four more stakeholders; this time, members from Catalan policy authorities involved in waste management, climate action and circular economy (Department of Climate Action, Food and Rural Agenda, Waste Agency of Catalonia and Catalan Office for Climate Change). The meeting was equally profitable and brought forth many of the same questions discussed in the previous meeting.



In both cases, the upcoming Barcelona Interregional Meeting was also discussed and all members were adamant that their institutions actively participate in the meeting and very excited to meet all other CITISYSTEM partners and learn more about their initiatives and opinions about circular bioeconomy. Some additional ideas were proposed and contemplated to be carried out during the two days of the CITISYSTEM partners' stay.

#### Catalonia Regional Dissemination Event: Walking towards a greener future

Taking advantage of the presence of our CITISYSTEM partners in Barcelona, and at the Smart City Expo World Congress, we held our dissemination meeting there on the 9th of November.

Our stakeholders learned from Katerina Medkova's presentation about the project, and showcased their own initiatives. Miriam González, from the Department of Climate Action, Food, and Rural Agenda, presented the 2030 Catalan Bioeconomy Strategy, defining it as an opportunity to advance toward economic, social and environmental sustainability while guaranteeing territorial balance, and updated everyone on the 1<sup>st</sup> Action Plan that is already being implemented.

Francesc Giró, from Strategic Planning of the Catalan Waste Agency, addressed Catalan policies regarding waste collection and brought us on a journey about the history of biowaste management in Catalonia, its status and the challenges that still lay ahead.

The event concluded with a dynamic round-table moderated by Lluis Rovira and Maria Jäppinen, who put forward insightful and thought-provoking questions that sparked debate and left everyone involved invigorated and motivated to continue working towards creating healthier and more sustainable cities for future generations.



# CITISYSTEM Webinars

We plan to have every semester a thematic webinar.

The first CITISYSTEM webinar was organized on the 16.6.2023.

**Read the summary** 

## CITISYSTEM Core Phase Semester Periods:

Semester 1: 3–8/2023 FINLAND **» Semester 2: 9/2023–2/2024 SPAIN** Semester 3: 3–8/2024 BELGIUM Semester 4: 9/2024–2/2025 SLOVENIA Semester 5: 3–8/2025 SLOVAKIA Semester 6: 9/2025–2/2026 GREECE

# Semester 2:

# 2<sup>nd</sup> Thematic webinar

The second thematic webinar on System/city-level examples of successful biowaste collection, processing and utilisation for energy and compost took place as planned on 23.1.2024, hosted by CERCA.

The webinar gathered experts from various European countries to delve into different strategies employed by municipalities to achieve effective biowaste management. Thus, presenters from Germany, Catalonia, Slovakia, Finland, and Italy guided attendees through their ideas and proposals to improve biowaste collection, and discussed good practices already being implemented and tested in their regions.

The presentations spanned a wide array of topics, ranging from the role of cities and municipalities in waste management, to valorization of urban residual organic effluents or model-experiments for improving collection of biowaste, which resulted in a session that proved to be both informative and productive.

In addition, it provided participants with a platform to exchange views and draw inspiration from the accomplishments of other institutions and agents of change, paving the way for them to apply similar approaches in their respective regions.



# **Upcoming in Semester 3:**





Project partners and stakeholders at the Kick-off meeting. Picture: Oona Rouhiainen.

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