

Highlights

5th OECD Roundtable on the Circular Economy in Cities and Regions

Accelerating the Transition to a Circular Economy in Cities and Regions
5-6 June 2023, Tallinn, Estonia (hybrid)



Introduction

As part of the [OECD Programme on the Circular Economy in Cities and Regions](#), the [5th OECD Roundtable on the Circular Economy in Cities and Regions](#) on *Accelerating the Transition to a Circular Economy in Cities and Regions* took place in Tallinn, Estonia on 5-6 June 2023. Co-organised by the OECD, Tallinn European Green Capital 2023, the Commission for the Environment, Climate Change and Energy (ENVE) of the European Committee of the Regions (CoR) and the European Commission's Circular Cities and Regions Initiative (CCRI), the Roundtable gathered 100 on-site and 250+ online participants from local, regional and national governments and European institutions, networks of cities and regions, as well as stakeholders from civil society, academia, the private sector, international organisations and foundations.

The 5th OECD Roundtable on the Circular Economy in Cities and Regions sought to:

- Launch the new OECD report: [The Circular Economy in Tallinn, Estonia](#).
- Share and learn from initiatives developed by cities and regions towards the implementation of the circular economy.
- Present the European Commission's [Circular Cities and Regions Initiatives \(CCRI\)](#).
- Advance the measurement agenda of the circular economy in cities and regions.
- Visit urban spaces for circular solutions in Tallinn.

3 Key takeaways

- **There is an urgent need for a circular economy to address climate challenges, but actions are implemented at a small scale and mainly concern waste management:** Participants recognised the importance of transitioning from a linear model of resource consumption to a circular economy. The circular economy approach aims to keep resources in circulation, minimise waste, and maximise the value of products and materials. The circular economy is underestimated in addressing climate challenges. To meet climate targets, significant and decisive changes in resource use are necessary, moving beyond the limitations of a linear economy.
- **Governance conditions to transition from a linear to a circular economy are essential:** All the regions and cities that intervened during the event highlighted the importance of stakeholder engagement, education, and overcoming policy and funding challenges to promote circular practices for sustainability and climate solutions. The audience indicated that the business community and start-ups should be further involved in implementing circular economy strategies.
- **Monitoring progress towards a circular economy is needed but there are many challenges:** Some national, regional and local governments have developed circular economy strategies, but only a few established monitoring frameworks. There are several challenges in monitoring the circular economy, such as the lack of an agreed definition, lack of harmonisation, incomplete

information, and a strong focus on waste-oriented indicators. These challenges hinder a comprehensive understanding of the circular economy's progress.

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Opening remarks

Mr. Joosep Vimm, Deputy Mayor of Tallinn (Estonia) welcomed the participants to the 5th OECD Roundtable and expressed his gratitude for the OECD report on [The Circular Economy in Tallinn, Estonia](#). He emphasised the urgent need to transition from the linear model of resource consumption to a circular economy, where resources are kept in circulation, waste is minimised, and the value of products and materials is maximised. Notably, Tallinn received the prestigious European Green Capital 2023 award, adding to the city's responsibility to adopt circular practices that enhance resource efficiency, reduce greenhouse gas emissions, and promote sustainability towards achieving carbon neutrality by 2050. Accelerating this transition demands a cross-sectoral approach, fostering collaboration among national governments, cities, businesses, and civil society, while effectively implementing circularity principles.

Markku Markkula, President of the Helsinki-Uusimaa Region (Finland), Vice-President of the CoR, thanked the City of Tallinn for hosting the Roundtable and conveyed greetings on behalf of **Rafal Trzaskowski**, the Chair of the European Committee of the Region's Commission for the Environment, Climate Change and Energy (ENVE) and Mayor of Warsaw (Poland). He shared that the Helsinki-Uusimaa Region has set specific targets, including reaching carbon neutrality by 2030 based on the [Helsinki-Uusimaa Regional Climate Roadmap](#). The region is developing circular economy solutions through the [Helsinki-Uusimaa Circular Valley](#), a platform that gathers 100+ stakeholders. He presented the CoR's flagship initiative, the [Green Deal Going Local](#) (2020), aiming at placing cities and regions at the forefront of the EU's transition to climate neutrality. Additionally, CoR supports [5 EU Missions](#), to make 150 regions and communities climate resilient, amongst other objectives. These actions are linked to the [New European Innovation Agenda](#), as well as the recently launched [Regional Innovation Valleys \(RIVs\)](#), which aim to engage regions with low innovation performance by building on strategic areas of regional strength and specialisation in support of key EU priorities.

Aziza Akhmouch, Head of the Cities, Urban Policies and Sustainable Development Division, Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), OECD welcomed participants to the Roundtable, the first hybrid meeting after the COVID-19 pandemic. She highlighted several examples of progress towards a circular economy in recent years, including the establishment of strategies in cities and regions such as [Glasgow](#) (UK), [Castilla y León](#) (Spain), and [Prague](#) (Czech Republic). Furthermore, private sector investment in the circular economy has intensified, with the number of private market funds dedicated to the circular economy increasing tenfold between 2016 and 2020. Recent shocks, including the global growth slowdown and energy crises as a consequence of Russia's large-scale aggression against Ukraine have provided a momentum to accelerate the transition to a circular economy by governments, businesses, and individuals. Cities and regions are not "wasting" this crisis but are actively adopting measures that are more politically and socially acceptable now than before the pandemic: from localising production in Paris, to creating urban food hubs to avoid waste in Milan and Glasgow. However, the global waste generation and recycling rates still reflect the prevailing *take-make-waste* logic, with only 15% of waste being recycled globally. In the future, population growth and continued urbanisation will increase demand for water, food, services, but also for infrastructure and housing, leading to increased material use. Yet, cities already absorb nearly two-thirds of the global energy demand, release up close to 70% of greenhouse gas (GHG) emissions, and produce 50% of the world's waste.

Aziza Akhmouch launched the OECD report on [The Circular Economy in Tallinn, Estonia](#) as result of a two-year policy dialogue with the local government and 60 stakeholders from the public, private sector, universities, and associations. Over the last 10 years, Tallinn has demonstrated considerable progress towards sustainable waste management: from 2012 to 2019, biowaste collection almost tripled, while landfill decreased by 80% over the same period. The city has also recently banned the use of single-use plastic plates, cups and utensils at public events and transformed the waste management department into

a Circular Economy Department. Moreover, the municipality has undertaken initiatives, such as the organisation of the Waste Reduction Weeks; a guide on minimum sustainable requirements for event organiser; the introduction of the Tallinn Creative Incubator to support the design of circular business models (e.g. product as a service). **Aziza Akhmouch** expressed her gratitude to **Mihhail Kõlvart, Mayor of Tallinn** for his commitment to the circular economy agenda and for his engagement in the [OECD Champion Mayors for Inclusive Growth](#). She also reaffirmed the readiness of the [OECD Programme on the Circular Economy in Cities and Regions](#) to support further the city of Tallinn in its transition to a fully-fledged circular economy.

Session I: Launch of the OECD report on “The Circular Economy in Tallinn, Estonia”

Oriana Romano, Head of Unit, Water Governance and Circular Economy, Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), OECD, illustrated the drivers that are pushing Tallinn towards adopting a circular economy approach:

- Tallinn’s commitment to environmental sustainability is a significant driver for embracing the circular economy. As the recipient of the European Green Capital award in 2023, the city aims to lead by example and implement measures to reduce its environmental impact. The circular economy offers a pathway to achieve Tallinn’s environmental goals, including carbon neutrality by 2050, as outlined in the Tallinn 2035 city strategy and the “Tallinn Sustainable Energy and Climate Action Plan 2030”.
- Tallinn’s growing population leads to an increased demand for services, housing, and infrastructure. With more people using resources, there is a greater need to adopt sustainable practices to manage resources efficiently and reduce waste. The circular economy’s focus on keeping products and materials in use for as long as possible and regenerating natural systems aligns well with the challenge of providing for a growing population while minimising resource consumption.
- Tallinn’s aging population may lead to changes in energy consumption patterns, with potential shifts towards greater use of energy sources such as electricity, heat, and gas. The circular economy’s emphasis on efficient resource use and renewable energy sources aligns with the city’s need to adapt to changing energy demands while minimising environmental impacts.

Over the last decade, Tallinn has demonstrated considerable progress in sustainable waste management. The city has significantly increased biowaste collection and achieved higher levels of separate waste collection, while reducing landfill usage. Building on this progress, transitioning to a circular economy allows Tallinn to further improve waste management practices and enhance resource efficiency. By also helping address environmental challenges, prepare for population growth, provide housing and infrastructure for refugees, and ensure sustainable resource management, the circular economy presents a holistic and practical solution to support the city’s sustainable development goals.

The OECD report analyses how Tallinn can play a role as a promoter, facilitator and enabler of the circular economy in the country, based on the identification of governance gaps:

- To **promote** the circular economy, Tallinn could: i) clearly define the responsibilities within its newly established Circular Economy Department, ii) lead by example, embedding circular economy principles in daily municipal activities and practices, iii) develop a circular economy strategy for Tallinn with clear objectives, targets and actions, iv) raise awareness on the circular economy through “circular economy ambassadors”.
- To **facilitate** the collaboration among a wide range of actors to make the circular economy happen in Tallinn, the city could: i) integrate circular economy principles, activities and metrics into the strategic policies; ii) align strategies and regulations with the Estonian government, through a co-ordination committee and joint funding projects; iii) set up regular inter-department meetings to inject circular economy principles in municipal practices; iv) lead a platform of Estonian local governments for collective action; v) enhance stakeholder engagement leveraging on the [European Green Capital 2023](#) and using digital tools ([Open the City Application](#)); vi) pilot projects and assess their results against pre-defined indicators.

- To **enable** the governance and economic conditions conducive to the circular economy, Tallinn could: i) apply the life cycle analysis and consider the longer-term impacts of each purchase; mobilise financial resources and foster efficient allocation of resources; ii) develop resource management, social and technical skills; iii) support capacity building for circular businesses in co-operation with universities; iv) support business innovation (hackathons, one-stop-shop, stimulating demand, idea competitions); v) develop a monitoring framework and make the most of information obtained through digital tools.

To conclude, **Oriana Romano** expressed the wish that Tallinn will use the report's recommendations to guide future decisions related to the circular economy, and reiterated the [OECD's](#) willingness to support the city of Tallinn in its implementation process.

Panel discussion

Meelis Münt, Secretary General, Ministry of the Environment of the Republic of Estonia, stressed that the potential of the circular economy is often underestimated in addressing climate challenges. Meeting national climate targets as set in the [National Energy and Climate Plan \(NECP 2030\)](#) requires making significant and decisive changes in resource use, moving beyond the limitations of a linear economy and embracing a more circular approach. Reflecting on national action, **Meelis Münt** pointed out the adoption of the [Circular Economy White Paper for Estonia](#) in 2022, which will be accompanied by an Action Plan by the end of 2023. The Action Plan is expected to encompass specific measures to position the circular economy as a core element of the national economic system and set indicators and targets to drive progress in this area. Moreover, the forthcoming National Waste Management Plan will set measures aligned with this approach. In addition, Estonia recognises the great potential of digitalisation for advancing the circular economy. The national government is piloting a real-time economy to track material and package flows, which aims to gather precise and up-to-date data on these flows. To support climate related projects, the Estonian [Environmental Investment Centre](#) (EIC) funded around 700 projects in 2022 on waste prevention, green technologies and resource efficiency, with a total public investment of EUR 37 million. It is foreseen that EUR 111 million will be allocated to resource efficiency until 2027. Overall, the ambitions of the Estonian government are closely aligned with the findings and recommendations presented in the OECD report.

Madle Lippus, Deputy Mayor, City of Tallinn emphasised the importance of having a clear vision to drive the transition to a circular economy. She underlined the need to maintain a cohesive understanding of the circular economy concept. [The Tallinn Sustainable Energy and Climate Action Plan 2030](#) showcases Tallinn's strategic efforts in advancing sustainability goals. She called for further policy coherence across municipal departments and invited the new Circular Economy Department to focus on issues related to built environment and renovation to provide suitable living environments for diverse communities.

Kalle Killar, Business Director, Strategic Management Office, City of Tallinn and moderator of the session, launched the following question on Mentimeter: Which stakeholder groups should Tallinn further involve for implementing a circular economy strategy? The results show a predominance in business community and start-ups, followed by households and civil society.

Figure 1. Which stakeholder groups should Tallinn further involve for implementing a circular economy strategy?



Source: Mentimeter, 5th OECD Roundtable on the Circular Economy in Cities and Regions, 6 June 2023.

Anthony Naralingom, Head of Unit, Economic Transition and Entrepreneurship Awareness, Brussels Agency for Business Support hub.brussels, Belgium, reiterated the importance of having a clear vision and specific objectives on circular economy. He drew on his experience in the Brussels-Capital Region (Belgium), which aims to reduce both direct and indirect CO₂ emissions, improve resource management, and boost local production. To achieve these goals, the region elaborated a [Regional Programme for the Circular Economy 2016-20 \(PREC\)](#). **Anthony Naralingom** shared some of the lessons learnt from seven years of programme implementation, underlining the need for public authorities to strengthen collaboration with entrepreneurs and academics who can provide practical solutions to identified challenges. Moreover, digital solutions should be systematically integrated into the programme to facilitate collaboration between solution providers and constituents dedicated to environmental and social challenges.

Jevgeni Ossinovski, Chairman of the Tallinn City Council, Member of CoR ENVE and ECON, highlighted the need for a deeper understanding of the circular economy and its connection to climate change. He emphasised that the circular economy should be considered not just as waste management, but as a practical solution for rethinking climate goals. He questioned the notion of green growth and expressed concern about relying only on increased recycling and reuse without addressing consumption levels. He also highlighted the potential pitfalls of focusing solely on energy efficiency, using the example of LED light bulbs and city lighting, where increased installation can lead to increased energy consumption. He stressed the importance of integrating circular economy principles into broader climate policies.

Session II: Cities and regions sharing experience - The European Commission Circular Economy in Cities and Regions Initiative (CCRI)

Annika Eskusson, Policy Officer, DG Research and Innovation, European Commission, provided an overview of the European Commission's [Circular Cities and Regions Initiative \(CCRI\)](#), launched by DG Research and Innovation as part of the EU [Circular Economy Action Plan 2020](#). It contributes to the policy objectives of the [European Green Deal](#) (2020) and the EU [Bioeconomy Strategy](#) (2020). The CCRI is largely supported by the EU's research and innovation funding programme ([Horizon 2020](#) and [Horizon Europe](#)) with over EUR 250 million allocated for the period 2020-2024. The objectives of the CCRI are twofold: i) showcase circular systemic solutions and ii) test circular business and governance models at territorial level. To support cities and regions in translating their ambition into true actions, the CCRI has set three pillars for action: i) technical assistance, ii) financial support, iii) a collaboration scheme through strategic partnerships (with organisations such as the OECD and the European Investment Bank enabling circular stakeholders to connect and cooperate). The CCRI has selected 12 pilots and 25 fellows from different EU Member States to benefit from tailored technical support and participation in 4 thematic working groups (resource management; bioeconomy; circular buildings; industrial symbiosis and circular economy in industries). Three types of projects are eligible for funding: (i) demonstration projects, which support the implementation of systemic circular solutions at local/regional level; (ii) project development support, which helps promoters to acquire technical, economic and legal expertise to develop their bankable investment projects; and (iii) cross-cutting projects, such as innovative governance models. The CCRI also collaborates with Associated Partners to further spread good practices and support the CCRI Pilots and Fellows (e.g. OECD, European Investment Bank, Ellen MacArthur Foundation, Circular Economy, EIT Circular Economy Community, the European Circular Cities Declaration, the Flemish Institute for Technological Research) to deepen collaboration and advance on the circular economy while ensuring good coordination.

Open discussion among cities and regions

All the regions and cities that intervened during Session II are committed to circular economy principles, which include waste reduction, resource efficiency, innovation, collaboration, and stakeholder engagement. Overall, their messages highlight the importance of stakeholder engagement, education, and overcoming policy and funding challenges to promote circular practices for sustainability and climate solution.

Waste Management and Recycling

- Helsinki region (Finland) and Tampere region (Finland) are actively engaged in the Circular Cities and Regions Initiative (CCRI) and have committed to becoming carbon neutral and circular economy hubs, by integrating circular economy principles into various sectors, including waste management. The two regions aim to become carbon neutral by 2030, as outlined in the [Carbon Neutral Helsinki Action Plan](#) and the [Carbon Neutral Tampere 2030 Roadmap](#) both updated in

2022. Circular economy principles are implemented in waste management practices, emphasising waste reduction, recycling, and resource efficiency.

- Dublin (Ireland) has developed a comprehensive circular economy strategy and focuses on waste prevention and recycling to reduce waste generation. The city has implemented door-to-door recycling and promotes composting to manage biowaste effectively. Dublin is also addressing challenges related to vacant properties and ageing housing stock, seeking innovative solutions for construction waste management and optimising energy efficiency in existing buildings.
- Deryneia (Cyprus)¹ has undertaken some circular economy initiatives, including educating children in kindergartens and schools on recycling practices. The municipality has implemented a door-to-door recycling system for plastic, glass, and paper waste collection. Deryneia also promotes recycling of building and farming materials by creating “green spots” where citizens can take these materials for recycling, contributing to waste reduction and resource efficiency.

Renewable Energy and Energy Efficiency

- Kežmarok (Slovakia Republic) has embraced a circular economy approach to energy production by exploring the potential of geothermal energy and biomass. The town has drilled a geothermal borehole to supply energy to a significant portion of its households, reducing reliance on external energy sources and promoting sustainability. Kežmarok has also made progress in using biomass for energy production, covering around 15% of its energy needs through sustainable means.
- Oslo (Norway) emphasises the use of renewable energy and energy efficiency in its circular initiatives.
- Žilina Self-Governing Region (Slovakia Republic) aims to exploit the potential of hydrogen technologies ([Hydrogen Technology Research Centre](#)) and has established a new company to facilitate hydrogen production from waste. They seek better coordination and financing for innovation.

Industrial Symbiosis and Circular Business Models

- Roubaix (France) is involved in the "[Upcycle Your Waste](#)" project to explore and expand industrial symbiosis practices and circular business models by fostering synergies between businesses. The city aims to accelerate the adoption of circular business practices by local small and medium-sized enterprises (SMEs) and develop networking activities and research to foster synergies between businesses.
- Oslo (Norway) has established [Circular Resource Centres](#) and libraries that lend equipment, promoting resource sharing and circular practices. Oslo uses public procurement as a tool to meet the demand for materials and strives to become fossil-free by 2025.

Resource Efficiency and Innovation

- Guimaraes (Portugal) has a dedicated circular economy programme, “Guimarães for Circular Economy (G4CE)”, which fosters innovation, research, and development to foster circular practices.

¹ The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”. The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

- Maribor (Slovenia)'s circular economy strategy aims at closing the loop of municipal utility companies and using material streams and waste for the city's purposes, promoting resource efficiency. The city has transformed derelict land into garden plots, allowing local communities to grow food and enhance resource utilisation.
- Białystok (Poland) has invested in a thermal waste treatment plant that generates electricity from waste, exemplifying resource efficiency and innovative waste-to-energy solutions.

Stakeholder Engagement and Education

- Guimaraes (Portugal) engages citizens and works with schools to raise awareness on circular initiatives at the local level. The [RRRCICLO – Circular Economy in Guimarães](#) initiative led by the municipality provides more than 100 activities dedicated to schools at all education levels and aims to achieve sustainability goals sought by the European Union by 2030.
- Maribor (Slovenia) emphasises stakeholder engagement and sharing knowledge to drive progress in the circular economy. The city has developed a [Strategy for the Transition to a Circular Economy in the Municipality of Maribor \(2018\)](#) to close the loop of the municipal utility companies managing material streams and waste generated by daily services.

Policy and Funding Challenges

- Dublin (Ireland) faces challenges related to funding and procurement regulations hindering large-scale circular economy implementation.
- Žilina Self-Governing Region (Slovakia Republic) encounters challenges in coordinating efforts between stakeholders as the implementation of projects is submitted to different regulations and various sources of funding. .
- Harju region (Estonia) faces financial constraints and competitive price comparison in adopting new circular technologies. Limited resources particularly affect capacity in heating and water management areas, moreover, price comparisons discourage companies from implementing prototypes that exceed average market prices.
- Zagreb (Croatia) highlights the need for supportive legislative and policy frameworks at national and local levels to advance circular economy initiatives.

Session II concluded with the launch of the following question on Mentimeter: What kind of support from international organisations and other levels of government are you seeking to become circular? The results show a predominance of votes related to adequate regulation and financing. (Figure 2)

Figure 2. What kind of support from international organisations and other levels of government are you seeking to become circular?



Source: Mentimeter, 5th OECD Roundtable on the Circular Economy in Cities and Regions, 6 June 2023

Session III: Monitoring the circular economy

Ander Eizaguirre, Policy Analyst, Water Governance and Circular Economy, Centre for Entrepreneurship, SMEs, Regions and Cities (CFE), OECD, provided an overview of existing circular economy monitoring frameworks across national and local levels, and shared key takeaways on measuring the circular economy. He stated that the monitoring of the circular economy is a key pillar of the [OECD Programme on the Circular Economy in Cities and Regions](#). At the national level, although several countries have developed circular economy strategies, only a few have set up a monitoring framework. Some national monitoring systems (e.g. **Spain, Slovenia**) follow the [European Commission \(EC\) Monitoring Framework](#) which is composed of ten indicators, divided into four key areas: i) production and consumption; ii) waste management; iii) secondary raw materials; and iv) competitiveness and innovation. Other countries have adopted their own monitoring framework, e.g. The [10 Key Indicators for Monitoring the Circular Economy](#) (2017) in **France**; and “[A circular economy in the Netherlands by 2050](#)” (2016) in the **Netherlands**. At local level, Paris (France) has set performance and impact indicators for each of the 15 actions included in its two Roadmaps towards a Circular Economy; **Amsterdam** (Netherlands) measures its level of circularity by using three main indicators: value preservation (use of renewable resources), economic and ecological impacts; **Brussels-Capital Region** (Belgium) elaborated a set of 15 proposed indicators, mainly measuring the governance of the circular economy transition.

The OECD collected around 500 indicators from 30 circular strategies within the [OECD Inventory of Circular Economy indicators](#). Overall, 39% of indicators are related to the environment (CO₂ emissions, material consumption, energy, food and water savings) followed by indicators on governance (34%), economics (14%), infrastructure and technology (8%) and societal aspects (5%). A number of challenges for monitoring progress towards the circular economy have been identified, such the absence of a globally agreed definition of a circular economy, the lack of a standardised measurement framework and harmonised indicators, and the limited availability of data that in some cases narrows the scope of indicators cities and regions can use.

The OECD developed a [Scoreboard on the Governance of the Circular Economy](#) to help governments to assess the existence and implementation of governance conditions able to accelerate the transition towards the circular economy. The Scoreboard relies on a traffic light system and follows three steps: i) map stakeholders, ii) discuss and agree on the score and iii) define what works well and what needs to be improved. These steps can facilitate a better understanding of the different roles of each stakeholder in the systemic change from a linear to a circular economy.

Sarah O'Carroll, Cities Lead, Ellen MacArthur Foundation (EMF) started her intervention by providing an overview of measurement frameworks developed at EMF to advance the circular transition. One notable achievement of EMF is the establishment of the [Global Commitment](#) with the United Nations Environment Programme (UNEP). Signed by 500 organisations, representing 20% of the global packaging industry, this commitment unifies efforts to accelerate the circular transition for plastics. All signatories are committed to ambitious 2025 targets, namely: ensure 100% of plastic packaging is reusable, recyclable, or compostable; increase post-consumer recycled content; decrease virgin plastic use; increase packaging reuse; eliminate problematic or unnecessary plastic packaging. The EMF has also developed [Circulytics](#), a self-assessment tool for companies to monitor the transition more broadly and signed up by 2 000 organisations. In addition, the EMF has also supported the online platform [Ganbatte World](#) developed by the Circle Economy Foundation in collaboration with ICLEI and Metabolic in 2021. Ganbatte is an online platform that provides cities with the necessary data insights, knowledge and tools to achieve their climate goals through circular transition. It supports practitioners with data insights, knowledge and tools to achieve their circular transition.

Sarah O'Carroll highlighted a key set of indicators. A first category groups enabler, leadership, transition and process indicators capturing policy measures and initiatives that can drive impact, influence business models, and citizens' behaviour. Another focus should be on ii) outcome; impact; and performance indicators which encompass material waste, resource efficiency, and help monitor changes throughout the material life cycle, addressing environmental, economic, and social impacts. The EMF considers three main pillars regarding measurement. First, standardisation and harmonisation represent a major step for cities lacking data collection platforms, capacity, and technical skills. Locally applicable indicators would enable cities to benchmark, share knowledge, and learn from local and regional experiences. Second, better linkages to high-level political agendas such as Sustainable Development Goals (SDGs), climate action and regenerating biodiversity can help expand the scale and scope as well as funding opportunities for the circular economy. Third, there is a need to conduct more research and exploration on indicators beyond waste and pollution.

Open discussion among cities and regions

Cities and regions highlighted the challenges they face in measuring and monitoring progress in the circular economy. They also discussed the need for enhancing data standardisation, defining circular business practices, and developing effective monitoring tools to track circular economy initiatives.

- Tampere region (Finland) faces challenges in measuring and monitoring the circular economy, specifically in the building and housing-built environment sector. Lack of data at the regional and local level hinders their capacity to measure progress on circular economy targets set within the Finnish Green Deal.
- Tallinn (Estonia) enquired about solutions to scattered and diverse data, building on guidance from existing circular frameworks or examples from other countries for developing a monitoring framework.
- Uusimaa region (Finland) aims to create new business opportunities within the circular economy and measures the adoption of circular practices by businesses. However, there is a lack of data availability at the regional scale, and prior need to understand what constitutes a circular business to effectively measure companies' circular practices.

Lucie Blondel, Policy Officer, DG Research and Innovation, European Commission, and moderator of the session, launched the following questions on Mentimeter: What type of data you have already in place in your cities/regions? The results show a predominance of votes for GHG emissions; recycling, reuse and repair; and investments (Figure 3).

Figure 3. What type of data you have already in place in your cities/regions?



Source: Mentimeter, 5th OECD Roundtable on the Circular Economy in Cities and Regions, 6 June 2023

The responses to the following question - What type of information do you miss? - show a predominance of votes for “How resources are put back into the economy”; “Social impacts”; and “Progress towards the achievements of targets included in circular economy strategies” (Figure 4).

Figure 4. What type of information do you miss?



Source: Mentimeter, 5th OECD Roundtable on the Circular Economy in Cities and Regions, 6 June 2023

Working groups and reporting back

Lucie Blondel introduced the breakout groups discussion where participants addressed the below questions, for which rapporteurs provided a summary of discussions of their respective table.

- What kind of impacts would you need to assess to promote and scale up circular economy-related initiatives?
- How to measure the cost of the circular economy and the benefits?
- Which are the main gaps and difficulties you face when monitoring the circular economy (e.g. data gaps, lack of dedicated resources)?

The group discussions highlighted that a measurement agenda for the circular economy requires comprehensive strategies that encompass effective communication, robust data and measurement techniques, collaborative business approaches, and a strong focus on behavioral change. In particular:

- **Quantifying loops and impacts:** Effective monitoring and evaluation are vital to the success of circular economy practices. One of the challenges in this area is quantifying the share of material reuse, recycling, and upcycling. Due to the complexities of supply chains and data collection, accurately measuring these proportions can be difficult. To address this, it is essential to invest in improved data collection methods and establish collaboration with supply chain partners. Additionally, tracking the flow of recycled materials back into the local economy is essential for assessing the circular economy's effectiveness. A comprehensive approach to data collection and analysis is required to overcome these challenges.

Apart from environmental and economic impacts, the social impacts of circular economy practices are equally important but more challenging to measure. Social impacts are often qualitative and subjective, making them harder to quantify with precision. Therefore, developing appropriate

qualitative and quantitative assessment methods is essential for evaluating the social aspects of circular economy initiatives. However, measuring social impacts requires dedicated funding, political commitment, and a clear understanding from decision-makers on the importance of measuring circularity. Advocacy for the recognition of the significance of measuring circularity can help secure the necessary resources and support for social impact assessments.

- **Costs and emission savings estimates:** A hurdle in implementing circular economy practices is accurately estimating the costs and carbon emissions savings associated with these initiatives. While circular practices can lead to long-term cost savings and reduced carbon emissions, justifying the initial investment and estimating the exact returns can be complex. Thorough cost-benefit analyses and financial modelling are necessary to provide a comprehensive understanding of the long-term advantages of circular practices. Moreover, exploring financial incentives and policy measures to offset the initial costs can encourage businesses to make the transition to circular models. The uptake of the circular economy is uneven between start-ups and larger companies that continue to operate under traditional business models. While start-ups and smaller enterprises are often more open to adopting circular practices due to their flexibility and innovative nature, larger companies may face challenges in transitioning. Bridging this gap requires increased institutional cooperation, knowledge exchange, and collaboration between circular economy start-ups and larger corporations. Support and resources should be provided to help larger companies overcome barriers and successfully embrace circular practices.
- **Communicating costs and benefits:** One of the key challenges in promoting circular economy practices is effectively communicating their socio-economic benefits to various stakeholders. At both the macro-economic and company-specific levels, clear presentations of the positive impacts of circular practices, such as job creation, resource efficiency, and cost savings, are crucial. Demonstrating these benefits can attract the attention and support of government bodies, businesses, and communities. By highlighting the advantages of adopting circular approaches, including improved profitability, reduced environmental impact, and increased competitiveness, small and medium-sized enterprises (SMEs) can be encouraged to embrace circular practices. This requires tailored communication strategies that address the specific concerns and interests of different stakeholders. Properly communicating the potential advantages can help overcome hesitations due to perceived risks or lack of awareness, fostering a supportive environment for circular economy initiatives.

Lucie Blondel concluded the 5th Roundtable on the Circular Economy in Cities and Regions and thanked all the participants who joined in Tallinn and online. The 6th Roundtable will take place in spring 2024 (date to be confirmed).