The Circular City Centre – C3

THE 15 CIRCULAR STEPS FOR CITIES

European Investment Bank

Circular Cities & Regions Initiative

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THE 15 CIRCULAR STEPS FOR CITIES
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1 Introduction

The circular economy can help us address many of the crucial challenges and problems that we and our planet face today, such as wastage in different forms, resource depletion and climate change. Cities have a very important role in the circular transition as cradles or ecosystems and catalysts for circular change. This guidance document outlines why cities should actively engage in and support others in the circular transition and how they can do that through 15 circular steps.

This guide is published by the Circular City Centre (C3), a competence and resource centre within the European Investment Bank (EIB), which supports EU cities in their circular economy transition. C3 benefits from InvestEU Advisory Hub funding support.

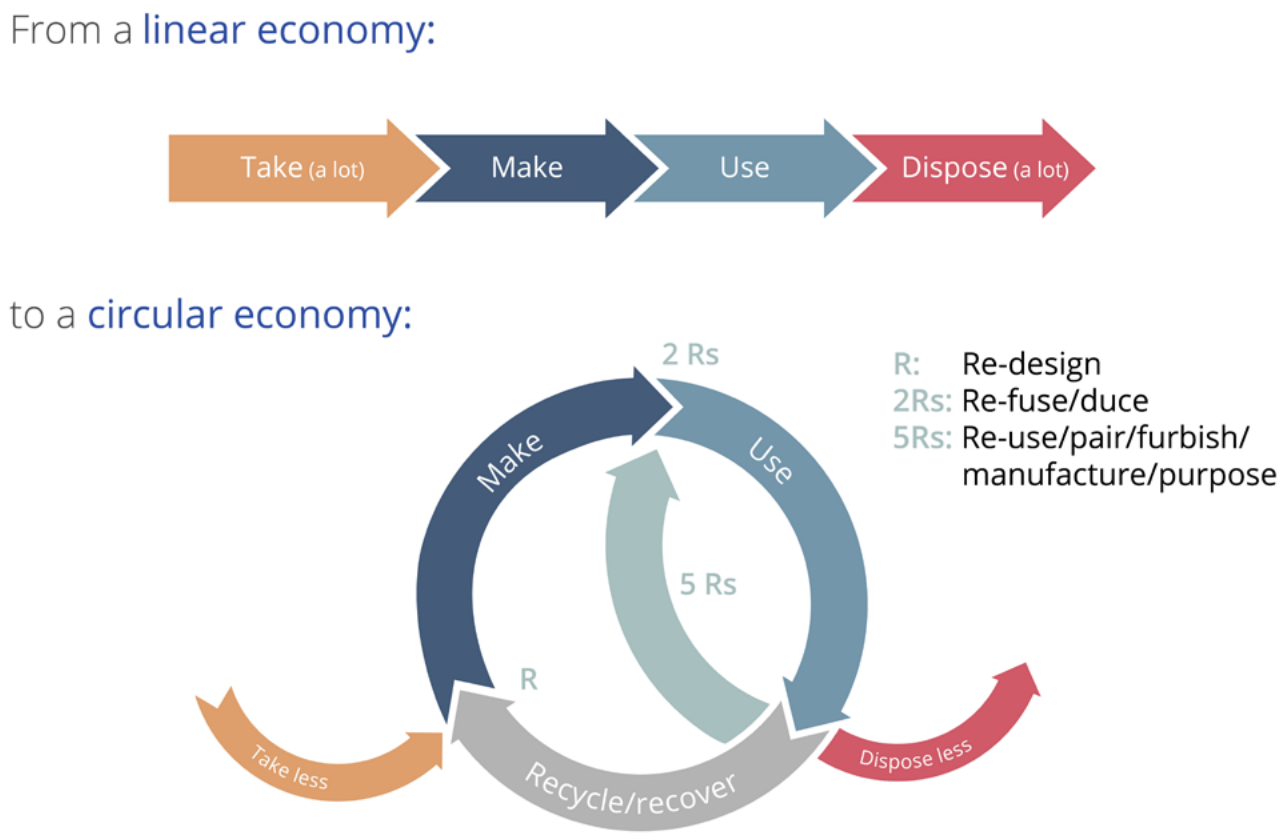
More information about C3 is available on the C3 web page, which features other C3 guidance documents for download and information about the circular city and project advisory services that C3 offers to cities.

For questions about C3, expressions of interest in any of the C3 advisory programmes or comments on this guidance document, contact the C3 team at C3@eib.org.

Why a circular economy?

As the global population grows in number and prosperity, the increasing consumption and related extraction of scarce and finite resources has become unsustainable, and a fundamental change in our resource use is urgently needed. This will require a shift from our current linear take-make-use-dispose production and consumption approach to a more circular economy, where we maximise the use and utility of resources, products and assets and minimise resource consumption and wastage in all forms.

The goal is a circular economy that can satisfy societal needs in a more resource-efficient way. In its most simple form, a circular economy transition can be depicted in the following way.



The transition from a linear to a circular economy

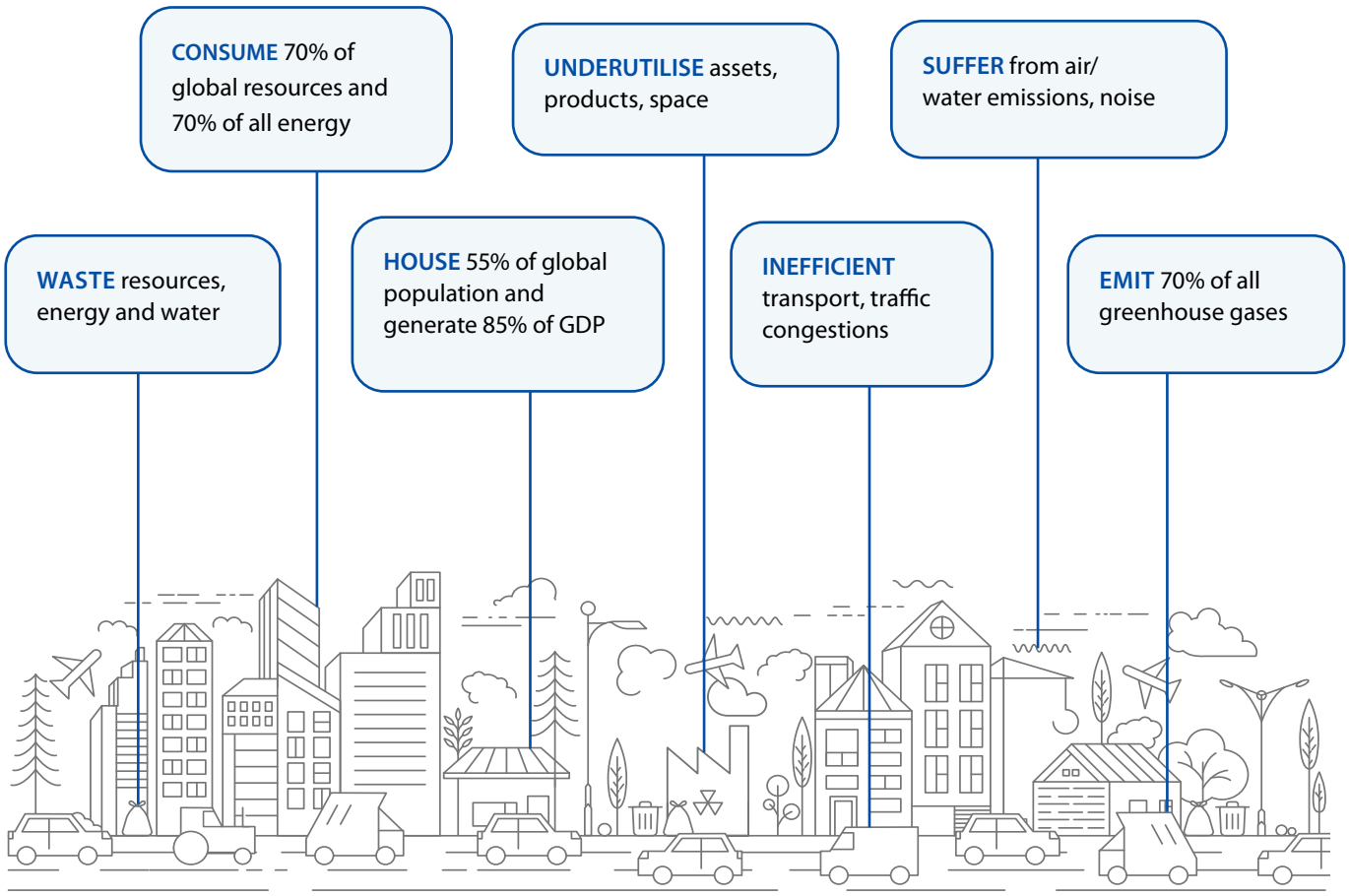
The transition to a circular economy not only conserves resources, but also fosters innovation and thereby increases competitiveness and creates new jobs. At the same time, the circular economy is increasingly being recognised as a significant way of reducing the impact of production and consumption on the environment and climate change. Resource extraction and use account for 70% of all greenhouse gas emissions.[1] Adopting circular principles will reduce global greenhouse gas emissions and help build a city's economic and social capital in a way that respects planetary boundaries.

While this approach may seem new and revolutionary, the "waste not" imperative of the circular economy was a central principle in our society before the Industrial Revolution introduced a culture of mass production, consumption and disposal. In a sense, the transition to a circular economy therefore involves going forward to the past.

What challenges are cities facing today?

On a global scale, cities use about 3% of the Earth's land and house about 55% of the world population (almost 75% in Europe).[2] With increasing urbanisation, the share of the population living in the world's cities is expected to increase to 70% by 2050 and up to 85% in Europe.[3] The impact of cities, however, extends beyond their borders. Cities consume about 70% of global resources and 70% of all energy generated. They are responsible for more than 70% of human-induced greenhouse gas emissions and 50% of waste generated. At the same time, cities make inefficient use of assets, resources, space and time. For example, a car is parked more than 90% of the time on average, 30% of food is wasted and the average office is used only 35-50% of the time.

Many cities suffer from what could be called linear externalities, for example emissions to air and water, and noise and congestion caused by inefficiencies in assets and resource use. They are also exposed to the linear risks related to increased demand for resources and their limited availability or even scarcity. The coronavirus pandemic highlighted the risks associated with overreliance on vulnerable global supply chains. Circular economy interventions can help cities to reduce such risks and increase their liveability and resilience by making best use of available resources and reducing emissions while meeting climate targets.



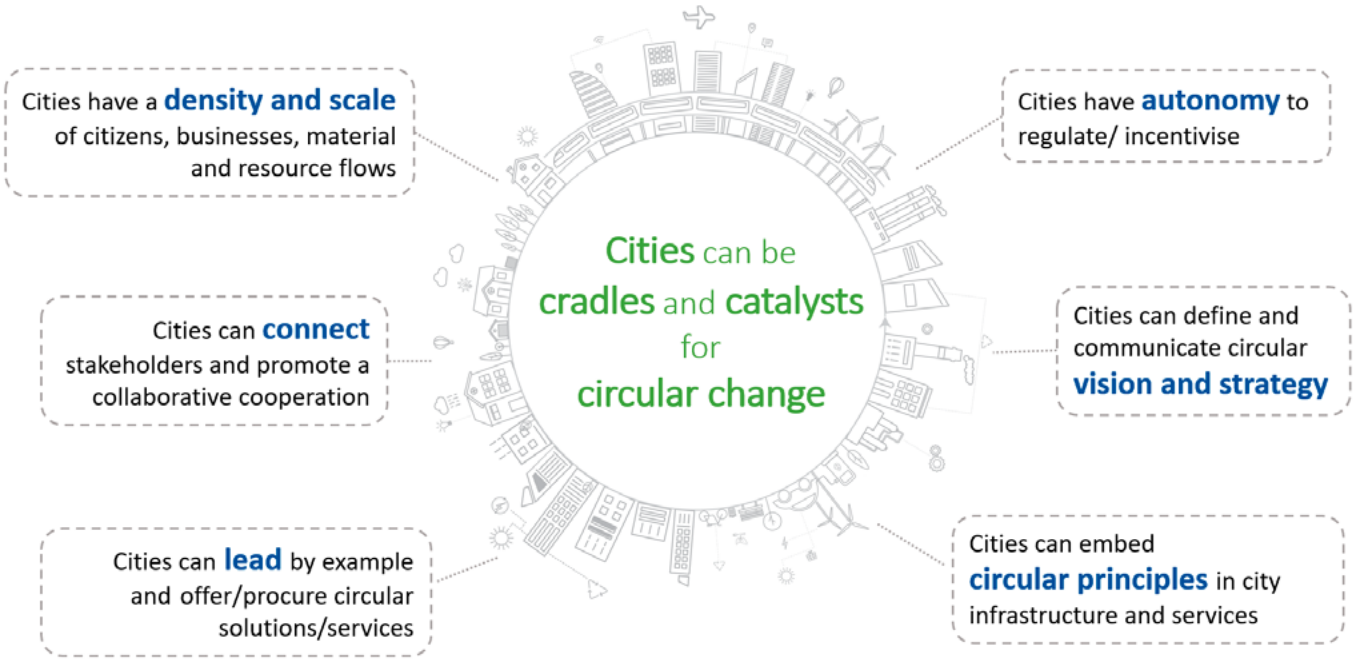
Examples of wastage and linear externalities in a linear city (GDP, gross domestic product)

Why are cities relevant in the circular transition?

While cities are the origin of many of our environmental problems, they can also be the solution. Cities are densely populated areas with large numbers of manufacturing businesses, bringing about increased consumption and the generation of material and resource flows with circular potential. Most cities operate on a scale that, on the one hand, enables quick decisions, building on autonomous powers to regulate and incentivise, and, on the other hand, is large enough to enable the establishment of new circular city functions and services, and circular assets and business models. Cities also construct and maintain buildings, infrastructure, utilities and services with circular potential.

City administrations can define and communicate a circular vision, establish a circular strategy and embed circular principles in city functions and services, and thus create a good framework for the circular transition. City administrations can also lead by example, for instance by offering and/or procuring circular solutions and services. Lastly, city administrations have the ability to build circular awareness and promote a culture of collaboration among all stakeholders.

In summary, a circular city is not just the sum of its circular activities. It must also fully realise and exploit its potential to be a cradle for circular development and use its governance tools and levers as catalysts for circular change.



Cities as cradles and catalysts for circular change

What will a circular city look like tomorrow?

A circular city conserves and reuses materials and products, shares and increases the use and utility of all assets, and minimises resource consumption and wastage in all forms.

Circular cities have modular and flexible buildings designed for repurposing, to enable effective utilisation, and for disassembly, rather than demolition, which facilitates reuse and recycling. They use renewable energy that is produced locally and regionally, powered, for example, by the sun, wind or secondary resources to the greatest extent possible.

People use non-polluting and efficient mobility systems, powered by renewable energies and, where possible, automated with sharing, pooling and on-demand services.

A local urban bio-economy ensures that all organic waste and by-products are recovered and used as feedstock for nutrient or chemical recovery, with the residues used for energy generation and later returned to the soil. Urban farms recycle organic waste and by-products, reuse water and waste heat, and produce vegetables for the local market.

Waste and wastewater generation is minimised, with maximum value recovery, and residues are processed for return to the soil or use in urban farming.

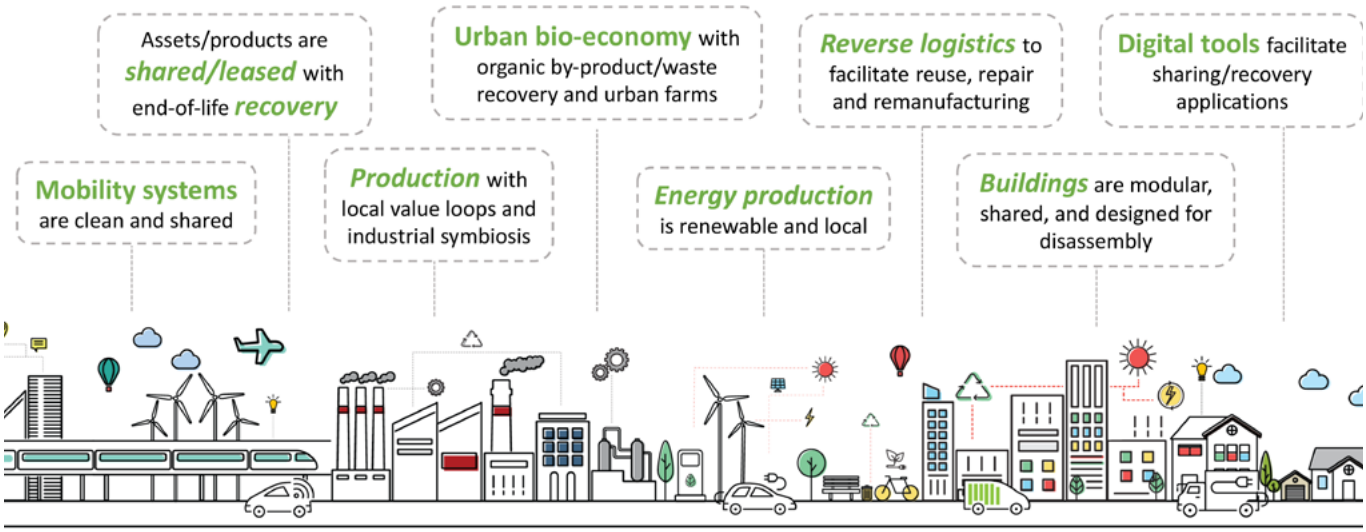
Production and consumption are local to the greatest extent possible, complemented with local product and material return loops and residue recovery. Companies are located in industrial clusters and matched to facilitate and enable industrial symbiosis in which residues, by-products or waste heat/water generated by one company can be used by another, thereby saving feedstock costs for one company and waste management costs for the other.

Transport and delivery companies increase the efficiency of their operations by optimising distribution strategies and deploying low-emission vehicles. They engage in reverse logistics for take-back and returns of products for reuse, repair and remanufacturing, and recycling for materials.

Circular test labs, repair shops and sharing centres are available throughout the city to enable and encourage residents and entrepreneurs to test and practise their new circular ideas and business models.

Digital tools facilitate asset/material tracking, and product/material/service exchanges facilitate sharing applications, industrial symbiosis and monitoring of circular progress.

Circular cities are regenerative and resilient to diminishing resource supplies and climate change. They are also clean, prosperous and liveable and therefore attractive places for people, companies, city planners and decision-makers.



A circular city tomorrow

2 The 15 circular steps for cities

A city's journey towards circularity involves **preparing** and **planning** the circular transition, creating an enabling environment, **facilitating** stakeholders' engagement, **taking circular action** on many different levels across the city and **implementing circular projects**.

This guide defines three phases and 15 key steps in the circular journey for cities and provides guidance and relevant resources that can help in the implementation of each step. The 15 circular steps constitute an action-focused roadmap, where some of the steps are sequential and others are not.

When applying these steps, a city must consider its context, characteristics, strengths and weaknesses, and identify the needs and opportunities and the barriers and challenges to be addressed. The goal is to maximise the potential for the city to be a cradle for circular developments and for the administration to catalyse the circular economy transition to the greatest extent it can.

The 15 circular steps for cities are listed and presented in detail below, with a summary provided in Annex 1.

Phase 1 – Prepare and plan

To start the circular journey, the city administration together with all relevant stakeholders should look at current linear issues and future circular potential, and then map out a circular transition path. This phase comprises the following five steps.

Step 1 – Connect and facilitate cooperation among circular stakeholders.

Step 2 – Characterise and analyse local context and resource flows and identify idle assets.

Step 3 – Collect good circular examples and learn from other cities.

Step 4 – Consider circular options for priority sectors and municipal services and assets.

Step 5 – Craft a circular vision and strategy with clear goals and targets.

Phase 2 – Facilitate and act

With the circular potential of a city translated into a vision and strategy for circular development, the city administration can facilitate the work and support relevant stakeholders through a series of steps.

Step 6 – Coach and educate to mobilise people, businesses and civil society.

Step 7 – Create an enabling environment for circular businesses and people.

Step 8 – Champion and procure circular assets, products and services.

Step 9 – Cultivate and support circular businesses.

Step 10 – Catalyse circular innovations and support their mainstreaming

Phase 3 – Invest and implement

To translate the momentum behind and ambition for the circular economy into action, the city administration and relevant stakeholders can support implementation through a number of key steps.

Step 11 – Close loops by connecting the generators and potential users of wasted resources.

Step 12 – Care for and re-engage assets to extend their useful life, use and utility.

Step 13 – Construct circular buildings and infrastructure and incentivise others to do the same.

Step 14 – Channel funding and financing to circular projects.

Step 15 – Communicate on circular progress based on monitoring.

Phase 1 – Prepare and plan

To start the circular journey, the city administration together with all relevant stakeholders should look at current linear issues and future circular potential, and then map out a circular transition path. This prepare and plan phase comprises the following five steps.

Step 1 – Connect with and facilitate cooperation among circular stakeholders

When starting the circular journey, it is important to involve all relevant local government departments (planning, economic development, solid waste and water management, transport, housing, environment, finance, etc.) and non-governmental organisations (NGOs) to establish long-term engagement and commitment. Local governments cannot implement a circular economy on their own, and must mobilise local businesses, organisations of different kinds and people to achieve effective action. Engaging with local entities to build capacity and create a common understanding of challenges and opportunities helps to align actions towards agreed circular objectives and goals. Actively involving stakeholders will also reduce resistance to change and build a spirit of collaboration, resulting in a shared sense of ownership that will create positive momentum.

Shifting from linear to circular approaches requires innovative and sometimes new types of collaborations. For example, industrial symbiosis requires value chain cooperation to match the supply of residues and by-products with demand for this as feedstock for new production. It may also require connecting different value chains, for example using food processing by-products as feedstock for construction materials. Although establishing local value chain connections is important for efficient exchange of physical resources, linking to regional, national or international platforms can increase opportunities and provide useful inputs and inspiration from more advanced circular cities and businesses.

To connect and facilitate cooperation among circular stakeholders, a city should focus on the following actions:

- **Map local circular stakeholders for possible inclusion in the task team.** Identifying and mobilising the right stakeholders at an early stage of the circular journey will ensure that diverse ideas, options and views are considered, and can increase acceptance of and buy-in for the changes proposed.
- **Build capacity on circular economy principles and options for action.** A shared understanding of what does and does not fit within the city's definition of a circular economy will create a common understanding from which options can be identified, discussed and agreed.
- **Leverage/establish local platform(s) for connection and interaction.** Existing circular economy and sustainable city networks, platforms, etc., should be considered as means of mobilising and connecting circular stakeholders and facilitating their collaboration (see examples below). In cases where existing networks do not meet a city's needs (for example language), it may be worth establishing a new local network.

Useful resources

- Reflow - Matrix of Circular Collaboration [tool/approach]

The Matrix of Circular Collaboration tool can help facilitate coordination, matchmaking and collaboration across various circular projects and initiatives within a city. The tool has been developed as part of the Reflow project and is based on the Public Engagement Canvas prepared by the University of the Arts London - Central Saint Martins within the T-Factor Horizon 2020 project.

- Kumu - ecosystem map [tool]

This tool, hosted by Kumu, allows dynamic mapping and visualisation of a circular ecosystem, including stakeholders, individuals and circular initiatives and projects. The tool can allow cities to visualise the complex circular ecosystem to help map and pinpoint connections.

- Urbact [stakeholder platform/guide]

This platform explores how cities can connect and share expertise and knowledge to accelerate the development of the circular economy. The platform also has a step-by-step toolkit to create meaningful engagement with stakeholders.

- UrbanWINS Toolkit - stakeholder engagement process [guide/handbook]

As part of the UrbanWINS project, a guidebook has been created that provides an overview of stakeholder engagement processes with a focus on urban waste players, and detailed explanations of participatory processes that can be followed.

Circular city networks

- ACR+ Circular Europe Network
- Circular Cities Declaration
- Circular Economy Club
- Circular Regions
- European Circular Economy Stakeholder Platform
- ICLEI Circulars

Extra resources to connect and facilitate cooperation among circular stakeholders can be found here.

Step 2 – Characterise and analyse local context and resource flows and identify idle assets

The circular economy can be approached from many angles, making it difficult to know how and where to start. A solid base of information can guide stakeholders in cities to make informed decisions and prioritise actions that have the largest impact. For this reason, developing a good understanding of the local urban context is key to starting the circular transition in cities, as it can help to clarify the problems in the linear system and identify opportunities for circular action and change.

By analysing their economic, social and environmental profile, cities can target the sectors with greatest potential for circular action, from increased product and asset use and reuse to waste minimisation. An urban metabolism study can help map all resource flows and identify opportunities to increase resource efficiency and close material loops. Some cities have already started to employ resource brokers to help companies identify wastage and potential to increase circularity in local value loops, including the repurposing of underused buildings and other idle assets.

To move from a linear to a circular economy, cities can gain a deeper understanding of the local context via the following actions:

- **Compare relevant economic sectors in terms of impacts and circular potential.** Sectoral data on employment, economic value, environmental footprint, resource consumption and waste generation, among others, can be used to compare different economic sectors in a city and identify those most worthwhile to target in a circular economy strategy.
- **Identify and map existing circular initiatives by the public sector.** Mapping ongoing or planned circular initiatives and projects can help connect stakeholders from various municipal departments around a common topic and ambition and contribute to breaking down traditional silos. It can also help identify municipal activities and services where there is a need and opportunity to start circular action.

- **Identify and map existing circular initiatives by the private sector.** Assessing the landscape of local circular business and citizen initiatives in the city provides important insights into which stakeholders and sectors are most active in the transition, what kind of approaches are most common, and where momentum and innovation might be leveraged for further upscaling. It may also identify sectors with circular potential where there is room or a need for further support.
- **Identify and map idle public assets.** Knowledge of the availability and ownership of unused or underused public assets (land, buildings, transport infrastructure, etc.) allows these assets to be matched to needs and potential new uses, with a view to extending their use and life in a circular way.
- **Investigate and review material flow analyses (MFAs) for the city and similar cities.** Mapping the material, residue and waste flows that form part of the urban metabolism of a city through MFAs helps identify inefficiencies and wastage, and circular opportunities for reuse and recycling. In addition, MFAs of primary sectors or themes provide an easy-to-understand visualisation that allows diverse stakeholders to recognise their roles in making the city more circular. While planning the study, it can be useful to look at MFAs carried out by other similar cities to understand how they use and reuse resources.

Useful resources

- Circle Economy - Circular Jobs Monitor [tool]

This online tool gathers and displays data on the number and distribution of jobs that are part of the circular economy around the world. The tool highlights the types and quantities of circular jobs within a particular city, and provides policymakers, economists and labour organisations with insights into the relationship between circular economy activities and the labour market across economic sectors.

- Circle Economy - Ganbatte Cities [tool]

The Ganbatte Cities tool enables local governments to discover and prioritise circular solutions for their city or region, based on socioeconomic and material data, and relevant circular case studies. The tool builds on Circle Economy's expertise and helps cities and regions develop circular economy action plans.

- Ellen MacArthur Foundation - circular city self-assessment [tool]

This self-assessment tool helps cities to understand and assess their progress in the transition towards a more circular food system. The questionnaire can help cities to understand which policy instruments are available and have been adopted across a range of opportunities for a circular food system.

- Metabolism of Cities - data hub and library [database]

This website provides an open-source global database of resource stock and flows data, publications and analyses pertaining to urban metabolism. It allows cities and practitioners to explore whether or not analyses have been previously conducted for a given city, use data to examine whether or not there are any patterns and trends in urban resource use, waste generation and pollution across the globe, and compare cities for which data are available.

- UrbanWINS Toolkit - urban metabolism approaches [tool]

Part two of the UrbanWINS project involved the development of a guide to help cities understand the theories of and approaches to carrying out an urban metabolism analysis. The guide highlights various tools for its implementation, and presents various sectoral and thematic case studies that can be used as inspiration across the life cycle of waste policies.

Extra resources to characterise and analyse local context and resource flows and to identify idle assets can be found here.

Step 3 – Collect good circular examples and learn from other cities

The circular economy is a relatively new concept for many local governments, and it can be difficult to envisage what actions are relevant and applicable in the context of a city. Case studies and best practices from other cities can provide inspiration on how and where to act, and can catalyse replication and adaptation. Making good practices and success stories accessible and disseminating know-how is critical to inspiring action within and between cities.

To learn and capitalise from the experience of other cities, a city should focus on the following actions:

- **Gain inspiration from circular city case studies and achievements.** Cities can learn from other cities that have progressed further in their circular transition to gain ideas and inspiration and to avoid mistakes made by others.
- **Reach out to inspiring circular project owners and initiatives.** To gain inspiration, local governments can reach out to those in the public or private sector who have implemented inspiring circular projects and initiatives. In some cases, these individuals or groups may be located elsewhere in the country or abroad but are willing to share their expertise and insights.
- **Join voluntary circular city agreements and support networks.** To demonstrate an intention to transition towards circularity, draw attention to the topic and learn from others, it can be useful to join circular city initiatives and support networks such as the Circular Cities Declaration, presented below.

Useful resources

- Circle Economy - Knowledge Hub on Circular Cities [case study collection]

Circle Economy's Knowledge Hub provides the world's largest collection of circular economy case studies. The Knowledge Hub is an online collaborative library of circular economy case studies that are relevant for cities, providing frameworks and definitions of circular strategies and policy instruments. In particular, the "Circular Cities" section of the Knowledge Hub provides a curated selection of the best city-related circular economy case studies from around the world.

- Circular Cities Declaration [stakeholder platform]

The Circular Cities Declaration is a voluntary agreement that outlines the commitment of European cities to transitioning towards a more circular economy. The website presents the circular work and actions taken by many of the signatory cities. The declaration document outlines the commitment to use a number of levers at the disposal of local governments to transition from a linear to a circular economy.

- EIB - Circular City Funding Guide case studies [case study collection]

As part of the Circular City Funding Guide, the EIB has compiled a collection of best practices in European cities that illustrate the circular economy transition. The case studies summarise valuable lessons learnt to support replication, and highlight extra information, such as how projects are funded.

- European Circular Economy Stakeholder Platform - "good practices" and "exchange" sections [case study collection]

This section includes relevant practices, innovative processes and "learning from experience" examples. All information is provided by the stakeholders who remain responsible for the accuracy of the content.

Other circular economy case study collections to consider are listed below.

- Ellen MacArthur Foundation - circular cities examples and case studies
- C40 Cities, EIT Climate-KIC - municipality-led circular economy case studies
- Circular Economy Club - circular economy map
- Collectors - database

Extra resources to learn from and capitalise on the experience of other cities can be found here.

Step 4 – Consider circular options for priority sectors and municipal services and assets

The broad applicability of the circular economy across a variety of urban sectors and systems has undoubtedly supported the growing recognition of the concept. However, at the same time, this can contribute to making the topic challenging to understand and see where to start and focus. It is important to know where to start and what to prioritise for greatest impact. Successful circular cities usually identify a few target sectors that are important in their socioeconomic context and have a high potential for improved resource efficiency and closing local material and value loops. Commonly targeted themes are construction, food and beverages, trade, electric and electronic equipment, and textiles.

To consider relevant circular options for priority sectors and municipal services and assets, a city should focus on the following actions:

- **Identify circular opportunities in priority sectors.** Consult and work with stakeholders of relevance to the sector (businesses, sector associations, non-profit organisations, academics, etc.) to identify and shortlist the circular opportunities that are most relevant and effective in the local context.
- **Identify circular opportunities in municipal services.** Work with city representatives, utilities and private sector municipal service providers to identify how city assets and services can be offered and delivered in more circular ways.
- **Identify how planned municipal projects could be realigned to seize circular opportunities.** Consider what projects, investments and programmes the city has planned in the short, medium and long terms, and investigate options for enhancing their level of circularity so that such principles can be included or improved as early as possible.

Further guidance and inspiration on this topic is provided in the C3 guidance document A catalogue of circular city actions and solutions, presented and linked below.

Useful resources

- A catalogue of circular city actions and solutions [guide]

As inspiration for cities starting or progressing in their circular economy transition, this C3 guidance document presents circular economy actions and solutions accompanied by case studies in eight sectors with high circular potential.

- Circle Economy - Ganbatte Cities [tool]

The Ganbatte Cities tool enables local governments to discover and prioritise circular solutions for their city or region, based on socioeconomic and material data, and relevant circular case studies. The tool builds on Circle Economy's expertise and helps cities and regions develop circular economy action plans.

- Ellen MacArthur Foundation - The Circular Economy in Cities resources suite [framework/factsheet]

This online resource created by the Ellen MacArthur Foundation provides valuable information and resources for cities that are looking to understand how they might transition towards a more circular economy. The resources include information related to a vision of what a circular city might look like, factsheets that highlight the potential of a more circular economy across three urban systems (buildings, mobility and products), as well as policy levers that highlight what instruments are at the disposal of cities.

- ICLEI - Circular Cities Action Framework [framework]

Developed in collaboration between ICLEI, the Ellen MacArthur Foundation, Circle Economy and Metabolic, the Circular City Actions Framework provides urban change-makers with five complementary strategies they can use to start working towards a more circular system. The framework is action based to provide users with concrete strategic directions and showcase the desired outcomes of each strategy.

- Urban Agenda Partnership for Circular Economy - Roadmap: Circular Resource Efficiency Management Plan [guide]

The guide offers cities and urban areas a structured, step-by-step approach to developing a substantiated plan of action that improves resource efficiency and drives the transition to a circular economy.

Extra resources to conceptualise circular options for priority sectors and municipal services and assets can be found here.

Step 5 – Craft a circular vision and strategy with clear goals and targets

Establishing a clear circular vision for the city serves as a guiding light for further strategic planning and implementation. It is also an important step in the development of a circular strategy at city level. Such a strategy should identify clear circular economy objectives and targets, and circular opportunities for different municipal activities and services, and for key economic sectors in the city. The strategy should also identify associated actions and stakeholders that have a role in translating those opportunities into practical actions, clearly allocating tasks and responsibilities.

Implementation of the circular strategy will require contributions from many parts of the community, including public and private companies, residents, research and teaching institutions, media and civil society. For this reason, defining a circular vision and preparing a circular strategy for the city should be done in a participatory way, encouraging involvement and buy-in from all

To develop a circular vision and strategy, a city should focus on the following actions:

- **Co-develop a vision for a circular city together with local stakeholders.** Define a clear and compelling vision for a circular city that outlines the circular future that the city would like to attain, involving key stakeholders to ensure that multiple perspectives are accounted for and that there is good understanding and support for the vision.
- **Describe the linear baseline and related negative impacts.** Using an MFA, describe the current linear situation and related adverse impacts, which can be used as basis for setting circular goals and targets. The baseline description will also facilitate the monitoring of circular progress.
- **Co-develop circular goals and targets.** Goals and targets should be set in a participatory way with a view to achieving the circular vision. They should focus on key sectors and activities, and ideally include clear timelines for achievement. This will ensure that all actions remain aligned with and support the guiding vision. It will also facilitate tracking progress and impact over time.
- **Select circular measures required to meet the agreed goals and targets.** Start by listing possible measures and activities in different sectors, compare them and select those that are most likely to be effective and succeed.
- **Agree on timelines, roles and responsibilities for implementation.** To translate measures into clear action plans, it is important that stakeholders are clear about and agree on what they need to achieve and by when, and that their actions are well coordinated.
- **Formulate the circular city strategy.** The circular strategy is prepared based on summaries of the outputs of the previous five actions. It should be formulated in a clear and compelling way, following consultations on key aspects and proposals with all relevant key stakeholders. Following this, the strategy should be officially adopted by the municipal council as the guide for the circular transition in the city.

Further guidance and inspiration in the preparation of a circular city strategy is provided in the C3 guidance document A guide for developing a circular city strategy, presented and linked below.

Useful resources

- A guide for developing a circular city strategy [guide]

This C3 guidance document provides an easy step-by-step guide for developing a circular city strategy, with best practice examples in Europe. The document also introduces common barriers to and key factors for success in this process.

- Climate-KIC, Veolia - Circular Cities: A Practical Approach to Develop a City Roadmap Focusing on Utilities [white paper]

This document aims to contribute to developing good practices for achieving more and better dialogue between systemic actors to establish a collaborative multi-stakeholder arena in the utilities sector, starting with a demand-led approach and working with city authorities, regional bodies, governments and industry leaders committed to transitioning to the circular economy.

- Reflow Handbook [guide]

The Reflow Handbook is an open, iterative and adaptive resource designed to help cities navigate and engage in this transition. It was used for the six Reflow pilots during the project duration (2019–2022), and compiles information on each key stage necessary to start a transition to a circular and regenerative city.

- Urban Agenda Partnership on Circular Economy - circular city governance [framework]

Developed under the Urban Agenda Partnership on Circular Economy, this resource provides an overview on the role of governance for cities in the transition towards a circular economy. The resource highlights the roles that cities can play to support the transition, and provides a framework for cities to identify roles and responsibilities to support circularity.

Examples of circular city strategies

- Amsterdam, Netherlands
- Granada, Spain
- Groningen, Netherlands
- London, United Kingdom
- Maribor, Slovenia
- Paris, France
- Turku, Finland

Extra resources to support in the development of a circular vision and strategy can be found here.

Phase 2 – Facilitate and act

With the circular potential of a city translated into a vision and strategy for circular development, the city administration can support and facilitate the work of relevant stakeholders in taking circular action through a series of steps.

Step 6 – Coach and educate to mobilise people, businesses and civil society

The circular economy offers opportunities to build awareness and foster a culture of collaboration across society. While cities can lead the way, the transition should happen not only in city administration offices, but also in homes, businesses, organisations of different kinds and educational institutions. To mobilise creative ideas and entrepreneurial efforts, city administrations can actively promote the circular vision and strategy, and build awareness of and understanding about circular opportunities and benefits, so that people and businesses can take an active part in the circular transition. Mobilising education and research institutions, media and civil society will facilitate and increase the reach and efficiency of such efforts.

To educate and mobilise different stakeholders, a city should focus on the following actions:

- **Educate people, businesses and civil society to catalyse action.** Education and training of different stakeholder groups across society can help to build a mutually reinforcing ecosystem of local entities that can understand and explain the circular economy, identify related opportunities and take appropriate action. Capacity-building programmes can be developed to target specific groups, for example sectoral experts, architects, facility managers and non-profit organisations.
- **Involve media, educational institutions and NGOs in awareness raising.** Sharing the city's vision and showcasing progress and innovations within the city are key to building a shared understanding of key concepts and encouraging bottom-up circular proposals and actions by different stakeholders. Mobilising media, educational institutions and NGOs in this can help to increase the reach and impact.
- **Host outreach and information events.** Establishing circular knowledge-sharing platforms, holding awareness-raising events, and developing community networks and marketing campaigns are effective ways to build awareness, encourage participation and initiate action.

Useful resources

- Ellen MacArthur Foundation - education and learning [resource collection]

To support the awareness and understanding of a circular economy across a range of audiences, the Ellen MacArthur Foundation has created a resource collection that offers, for example, circular economy courses and resources for teaching the circular economy, and which provides inspiration from others via a learning community.

- The Circular Classroom [toolkit]

The Circular Classroom is an interactive educational toolkit for school educators and students to integrate circular thinking into the classroom. This tool can be used by cities to support the integration of the circular economy topic in school programmes and educational initiatives.

- Urbact - The URBACT II Local Support Group Toolkit [guide/handbook]

This guide provides guidelines and tools that have proved useful in bringing together city stakeholders, and facilitating collaboration in the analysis of urban challenges and the co-creation of solutions, many of which are relevant for the circular economy transition.

Extra resources to educate and mobilise different stakeholders can be found here.

Step 7 – Create an enabling environment for circular businesses and people

The circular economy transition in cities will require all relevant stakeholders to actively participate. City governments can use different instruments to mobilise, facilitate and incentivise such participation.

Regulatory "sticks", such as municipal regulations and permits, and incentive "carrots", such as taxes and subsidies, can be used as instruments to drive circular change. For instance, charging the full cost, including externalities, for waste management and other environmental services can support waste minimisation efforts. Ideally, this should include a differentiated fee structure that incentivises reduction, reuse and recycling over disposal. Other examples include providing or subsidising land for industry clusters to promote industrial symbiosis and introducing circular requirements in licensing and permitting. Policy interventions can also apply multiple instruments to achieve desired outcomes in a more efficient and effective way.

To create an enabling environment for circular businesses and people, a city should focus on the following actions:

- **Revise/create supportive local legislation and regulations.** Change rules and regulations to encourage circular behaviour and use enforcement measures to drive more difficult changes. This can include establishing environmental and resource use standards, restricting permits to wasteful businesses, and implementing bans on linear products or practices.
- **Use economic instruments to encourage circular behaviour.** Send market signals and provide incentives to businesses, people and other organisations to promote certain activities. This can include direct financial support in the form of subsidies, grant funding and incubator programmes, as well as public-private partnerships and fiscal instruments (tariffs, tax breaks, subsidies, etc.).

Useful resources

- Ellen MacArthur Foundation - Circular economy in Cities: An overview of urban policy levers [guide]

This document provides short, practical examples of the various policy measures city governments can use to bring about circular economy transitions (over 100 cases from more than 70 cities around the world).

- European Bank for Reconstruction and Development - Effective Policy Options for Green Cities [guide]

This report introduces cities to the various policy instruments that are at their disposal to create an enabling environment to transition towards a more circular and green future. The report explores various themes, including governance, finance and waste.

- Organisation for Economic Co-operation and Development (OECD) - getting the governance of the circular economy right: checklist for action and scoreboard [tool]

This tool aims to support decision-makers in promoting, facilitating and enabling the transition to the circular economy. The checklist is accompanied by the OECD scoreboard on the governance of the circular economy, a tool for cities and regions to self-assess the existence and functioning of enabling conditions for circular economy policies, initiatives, strategies and programmes.

- Urban Agenda Partnership on Circular Economy - circular city governance [framework]

This resource investigates how cities can support circular models within their current governance. It acts as a first guide for policymakers who want to explore circular city governance.

- Foundation Operation - pay-as-you-throw toolkit [toolkit]

Developed under the Urban Agenda Partnership on Circular Economy, this toolkit provides detailed advice and support for cities to develop a pay-as-you-throw system for waste management.

Extra resources to create an enabling environment for circular businesses and people can be found here.

Step 8 – Champion and procure circular assets, products and services

Public procurement amounts to approximately 15% of gross domestic product in the European Union. It is one of the most important levers with which cities can drive circular change. By applying circular principles and criteria in the procurement of assets, products and services, city administrations can contribute to building a local demand for more circular products and services, encouraging and allowing space for innovation, and, over time, spurring the growth of a circular economy-based business culture. Through public procurement, cities can, for instance, integrate preferences for modular construction principles or for the use or purchase of used and/or reusable and refurbishable components and products, as well as ensuring that procured products or materials will be designed for reuse and recycling at the end of their life.

To lead the way through public procurement, a city should focus on the following actions:

- **Promote and establish an enabling environment for circular procurement.** Set and communicate the level of ambition in circular procurement. Form an internal team that can engage with local businesses to understand their needs and identify potential pilot projects and ways to support their circular efforts and initiatives.
- **Tender for circular assets, products and services.** Engage internally to assess needs and opportunities for circular procurement in different types of projects. Based on this, develop circular criteria for use in tender documents and evaluation process.
- **Review supplier performance in terms of circularity.** Measure performance against the established circular criteria and look for ways of ensuring that suppliers are meeting functional needs in as circular a way as possible. With this as a basis, the city can look for ways to improve the circular aspects of future tenders.

Useful resources

- European Commission - Public Procurement for a Circular Economy [guide/handbook]

To support public purchasers in supporting a transition to a circular economy, this guide contains a range of good practice case studies as well as guidance on integrating circular economy principles into procurement.

- Gemeente Amsterdam and Metabolic - Roadmap Circular Land Tendering [guide/handbook]

The roadmap is a guide to circular (land tendering) procurement criteria. It contains an extensive analysis of what a circular building project actually is and describes methods for measuring the extent to which construction projects meet the quantitative and qualitative criteria of a circular building project.

- Pianoo - sustainable public procurement [guide/handbook]

This website provides comprehensive information on sustainable public procurement, also called responsible and sustainable procurement. The information has been prepared specifically for public purchasers. The site contains a section dedicated to circular procurement.

- Sustainable Procurement Platform [resource collection]

This online resource collection provides a selection of tools and guidance for implementing various aspects of sustainable procurement. The resource collection covers guidelines for circular, environmental and socially sustainable procurement, as well as tools to help cities with more practical aspects of the tender process.

Extra resources to support the procurement of circular assets, products and services can be found here.

Step 9 – Cultivate and support circular businesses

City administrations can step beyond their usual roles and support local businesses in shifting to circular business models, and encourage them to engage in other actions that contribute towards a circular economy. Collaboration and partnerships can be fostered within and across value chains to contribute towards the city's circular goals, but this often requires external intervention. Forming new partnerships, joining networks and facilitating the development of new business models, tools and technologies can help businesses overcome challenges and barriers and seize opportunities to scale up circularity, while attracting new investments and creating new jobs.

To cultivate and support circular business models, a city should focus on the following actions:

- **Identify opportunities for information and communications technology tools to support the circular transition.** Information and communications technology has an important role to play in establishing new connections, supporting alternative business models, and gathering and sharing data for better decision-making and resource efficiency. Practical examples include waste or material exchanges that help to close loops, sharing platforms, systems for product tracking, and systems for registering components and materials in buildings to facilitate disassembly, reuse and recycling.
- **Support industrial symbiosis.** Local governments can use land and zoning laws to establish hubs for industrial symbiosis (for example eco-industrial parks) and create favourable conditions to attract businesses that can contribute to the closing of local material, water and energy loops.
- **Connect stakeholders via matchmaking platforms and co-location spaces.** By providing physical and virtual places for products and resources to be exchanged and traded, and for innovative new businesses to market their circular services, cities support the creation of a thriving ecosystem of circular economy entities.

Useful resources

- Circle Economy - The Role of Municipal Policy in the Circular Economy, Investment, Jobs and Social Capital in Circular Cities [white paper]

This report explores the association between municipalities pursuing circular economy policy and investments in circular business that create jobs. In addition, it takes a closer look at how businesses perceive this municipal support for the circular economy.

- Eurochambres - Chambers for a Circular Economy - Actions to Support SMEs' Transition to a Circular Economy [report - lessons learnt and recommendations]

This document aims to offer a clear overview of the wide range of initiatives led or co-managed by chambers in the field of the circular economy. The intention is not only to inform and share innovative actions, but also to spur and motivate synergies, triggering collaborations and the creation of new business models. The aim of each of these projects is to enable businesses to evolve from a linear to a circular mode of production and consumption.

- Copper8 - Circular Revenue Models: Required Policy Changes for the Transition to a Circular Economy [white paper]

This report provides insight into four key barriers commonly faced by the business community in the transition to a circular economy, providing a real-life business case as an example for each. It also includes a guideline for policymakers on how to address these barriers.

- Reflow - Matrix of Circular Collaboration [tool/approach]

The Matrix of Circular Collaboration tool can help facilitate coordination, matchmaking and collaboration across various circular projects and initiatives within a city. The tool has been developed as part of the Reflow project and is based on the Public Engagement Canvas prepared by the University of the Arts London - Central Saint Martins within the T-Factor Horizon 2020 Project.

Extra resources to cultivate and support circular business models can be found here.

Step 10 – Catalyse circular innovations and support their mainstreaming

The circular economy requires innovation on multiple levels to change the linear status quo, and cities can play an important role in supporting this. Innovation is often risky but can be supported by creating an enabling environment in which risk is well allocated and failure is accepted as part of the learning process. Businesses, in particular small and medium-sized enterprises (SMEs), should be encouraged to innovate in design and production, in finding new ways to access, use and reuse components and materials, and in use of new circular business models.

City governments can use and promote new innovative circular products, services or business models. Cities can also catalyse innovation by bringing together key stakeholders in the sustainable innovation ecosystem from both the private and public sectors, as well as academia and NGOs, and supporting such stakeholders in the co-development of solutions or through financing. Innovation can also be encouraged by relaxing regulatory and permitting frameworks and requirements, and creating suitable spaces for circular innovation, for example in the form of incubators.

To spur circular innovation, a city should focus on the following actions:

- **Establish or support circular living labs.** These experimental spaces allow entrepreneurs to develop solutions to specific circular challenges and test new circular products or business models in an enabling environment.
- **Establish or support circular impact hubs and startup incubators.** Impact hubs and incubators focusing on circular themes can encourage entrepreneurs, businesses and organisations to engage in solving city challenges in a circular way, with support provided by the city or business community.
- **Establish circular challenge funds.** Challenge funds with competitions for grant funding can incentivise and support innovators by offering grants that reduce their financial risks at early stages of development, and thereby accelerate innovation by supporting promising new circular solutions.

Useful resources

- City of Amsterdam - Startup in Residence toolkit [toolkit]

Following the success of the City of Amsterdam's Startup in Residence programme, where the city provides support for local entrepreneurs and startups that are tackling a key challenge defined by the city, the initiative has developed a toolkit to support the replication of the approach. Such an approach could be focused on the circular economy and support local innovation.

- Ellen MacArthur Foundation - EU's Innovation Deal for a Circular Economy [white paper]

Innovators from the automotive industry, Dutch and French public authorities, and the European Commission have collaborated to identify regulatory barriers to reusing electric vehicle batteries as energy storage devices and unlock solutions. The report summarises the key lessons learnt.

- Synergic Circular Economy across European Regions (SCREEN) - policy lab for circular economy [platform]

The Policy Lab for a Europe made by Circular Regions is a think tank open to all regional stakeholders willing to co-create and implement policies enabling EU industry, SMEs and people to adopt a circular, sustainable approach. Through this free platform, European regions working with circular economy projects can collaborate, explore possible scenarios and co-design solutions for better policies.

- UNaLab - Living Lab Handbook for Urban Living Labs Developing Nature-based Solutions [guide/handbook]

This handbook, developed by UNaLab, provides detailed step-by-step guidance to develop urban living labs, covering key aspects such as engaging communities, setting up and running the lab, as well as common pitfalls.

Extra resources to catalyse circular innovations and make them mainstream can be found here.

Phase 3 – Invest and implement

To translate the momentum behind and ambition for the circular economy into action, the city administration and relevant stakeholders can support implementation through a number of key actions.

Step 11 – Close loops by connecting the generators and potential users of wasted resources

Closing material cycles is one of the central themes of the circular economy and should be at the core of each city's journey towards circularity. An MFA study, prepared as a basis for developing a circular city strategy, shows the movement of local materials, residues and waste through the city, and can help to identify points with the greatest opportunity to close material and value loops. However, intervention is often needed to connect generators of excess residues, waste, water or heat to those who have a demand for such resources, in the interest of supporting a more circular system.

Organisations that handle, exchange and broker materials may interact with companies to help them identify residue and waste streams and wasted heat or water that could be used as feedstock or input for other companies. For instance, efforts can focus on increasing the collection and recycling of organic waste streams and by-products for use in bio-refineries, urban farms or in energy production, eventually returning nutrients to the soil.

To close loops by connecting generators and users of resources, a city should focus on the following actions:

- **Identify potential supply sources of residues, waste, water and heat.** Map where value is currently being lost as potential secondary resources. For example, identifying industries that generate large amounts of residues or by-products that are not recovered or energy-intensive factories that generate waste heat can help to identify opportunities to reduce virgin material or energy demand elsewhere in the city.
- **Identify potential users of residues, waste, water and heat.** Map local demand for secondary resources. For example, which are the industries that could use production residues as feedstock, or new developments that could use waste heat to heat homes and office buildings.
- **Facilitate connections between suppliers and users of residues, waste, water and heat.** Digital tools can play a valuable role in connecting entities that are open to circular collaboration, but direct interventions may also be needed to convince entities of the benefits. In the construction sector, secondary components and material marketplaces can use digital technologies to share and trade underused resources by connecting consumers to suppliers of the resources they need. Such marketplaces can also enable larger developers to provide surplus building materials to community projects and charities across the city.they require or wish to sell. Such marketplaces can also enable larger developers to provide surplus building materials to community projects and charities across the city.

Useful resources

- European Green Capital Network - less waste, more value toolkit [toolkit]

This toolkit contains guidelines, tips and case examples from leading cities in the circular economy in Europe. The toolkit and collection of resources can support cities to take the next steps towards a circular economy and improve waste prevention practices.

- SCREEN - how to identify cross-regional synergies [tool/approach]

As part of the SCREEN project, a tool and approach has been developed to support the identification of opportunities and synergies within the circular economy. The approach facilitates collecting relevant data, identifying interventions and exploring synergies.

- Urbact - learning about implementation [toolkit]

To support cities in the implementation of projects, Urbact has developed a toolkit that provides step-by-step guides. Learning from a rich experience in helping to bring urban projects into reality, this toolkit focuses on the "how" - from preparing for implementation and developing a participatory approach to measuring performance.

Step 12 – Care for and re-engage assets to extend their useful life, use and utility

Extending the use and life of all products and assets for as long as possible is an important goal in the circular economy and should be prioritised above the reuse of components and recycling of materials. Cities can contribute to this by establishing reuse and repair centres for residents, and helping companies to shift to circular sharing, leasing and product-as-a-service business models. They can also strive to repurpose or promote the sharing of underused, idle or abandoned buildings and other assets that they own and operate.

Extra resources to close loops by connecting generators and users of resources can be found here.

To extend the useful life of assets, a city should focus on the following actions:

- **Assess the circularity potential of idle public assets.** Map underused or idle buildings, infrastructure and capital equipment, and assess the possibility of repurposing such assets to meet current needs.
- **Identify opportunities to re-engage and link idle public assets to current needs.** Repurpose assets based on local needs and opportunities with circular economy goals in mind. Aiming to increase the use, for example by adaptable and flexible layouts, and multiple use or sharing arrangements, will increase the circular impact.
- **Identify and link relevant parties.** Extending the useful life of assets may require establishing new connections across government departments that do not usually work together, and possibly also with NGOs.
- **Develop maintenance plans and budgets for assets to extend their life.** Proper maintenance of assets is very important to extend their useful life and needs to be carefully planned, budgeted for and executed in a timely manner to avoid asset deterioration.

Useful resources

- ICLEI - Adaptive Reuse of Cultural Heritage [framework/report - lessons learnt and recommendations]

This synthesis report illustrates how cultural heritage adaptive reuse projects can be co-created and sustained over time, and how cities can engage and embed heritage communities in the process. It highlights 16 international case studies, which provided the research foundation for the study.

- One Planet - Policy Instruments on Product Lifetime Extension (PLE) [white paper]

This document aims to provide an overview of diverse policies for and regulatory approaches to product lifetime extension across the globe.

- Urban Agenda Partnership on Circular Economy - Sustainable & Circular Re-use of Space and Buildings: Handbook [guide/handbook]

This handbook, developed under the Urban Agenda Partnership on Circular Economy, provides a useful foundation for an overall strategy to support the reuse of spaces and buildings. The handbook looks at a new model of urban reuse management.

- Urban Agenda Partnership on Circular Economy - Urban Resource Centres [report - lessons learnt and recommendations]

This report, developed under the Urban Agenda Partnership for Circular Economy, provides a classification of local approaches to waste prevention, reuse, repair and recycling, and compiles the lessons learnt from experiences from cities around Europe. The report serves as inspiration and guidance for cities to develop urban resource centres.

Extra resources to extend the useful life of assets and re-engage idle assets to increase their use can be found here.

Step 13 – Construct circular buildings and infrastructure and incentivise others to do the same

Many cities have a steady influx of new residents due to urbanisation and migration. Older cities often have an ageing building stock, with buildings reaching the end of their useful lives or failing to meet energy efficiency requirements. Urbanisation combined with Europe's ageing building stock and the need for improved thermal efficiency is driving demand for buildings. Where possible, this demand should be met first by reusing, refurbishing and, if necessary, repurposing idle or underused buildings, and then by planning, procuring and constructing circular new buildings to fill the gap. Such buildings should be flexible and modular, designed for repurposing to extend their use and life, and designed as material banks for disassembly instead of demolition to facilitate the reuse of building components and the recycling of materials at the end of their life.

As new areas are developed, new infrastructure will be required to connect them to services. Energy systems should be planned based on renewable energy sources and local generation to the greatest extent possible. Mobility systems should be planned with a view to increasing sharing solutions and efficiency, and reducing congestion and emissions. Wastewater and solid waste systems should allow resource reuse and recycling to derive as much value from secondary resources as possible.

Applying circular criteria in public procurement and permitting is an important way to increase the level of circularity in the building and infrastructure stock in a city.

To support circular buildings and infrastructure, a city should focus on the following actions:

- **Renovate or construct government buildings in a circular way.** Where possible, renovation and, if needed, repurposing of good-quality buildings should be prioritised. Alternatively, new buildings should be designed in a flexible and modular way to extend their useful life and adapt them to changing needs. Reused components and recycled materials from older buildings should be used to the greatest extent feasible.
- **Renovate or construct public infrastructure in a circular way.** Infrastructure projects for energy, mobility and utilities can all include elements of circularity in their design and construction. For example, crushed rubble from demolition sites can be used as a base for new roads and paved areas.
- **Incentivise private developers to renovate and construct in a circular way.** In addition to leading by example through their own construction and procurement, cities can support the training of local architects, engineers, developers and builders in circular aspects of design and construction, for example design for modularity, adaptability and disassembly, and reuse of components and materials.

Further guidance and inspiration on this topic is provided in the C3 guidance document *A guide for circularity in the urban built environment*, presented and linked below.

Useful resources

- A guide for circularity in the urban built environment [guide]

This C3 guidance document helps cities progress in their circular transition in the built environment, from establishing an enabling framework to implementing circular solutions. The guide helps cities understand who to engage with and when, and it clarifies the built environment value chain and the circular strategies that can be applied at different stages of a building's life cycle.

- Circle Economy - A Future-proof Built Environment [white paper]

This report highlights real-life and practical examples of how to rethink the built environment, taking a systematic view on the sector to identify levers for circular change.

- Circle Economy, Metabolic, Dutch Green Building Society, SGS Search - A Framework for Circular Buildings: Indicators for Possible Inclusion in BREEAM [report/framework]

To support the inclusion of circular economy criteria within building projects, a strategic framework has been developed in collaboration with key stakeholders in the Dutch circular construction sector. The report describes indicators that could be included in the sustainable certificate BREEAM-NL to better evaluate the circularity of buildings.

- Metabolic - urban mining and circular construction [approach]

Metabolic works with cities to map their urban mining potential and develop circular solutions for a future-proof built environment. Rotterdam, Amersfoort and the Utrecht region have already taken practical steps in this direction.

- Urban Agenda Partnership on Circular Economy - Sustainable and Circular Re-use of Space & Buildings: Handbook [guide/handbook]

This handbook, developed under the Urban Agenda Partnership on Circular Economy, provides a useful resource for laying the foundations for an overall strategy to support the reuse of spaces and buildings. The handbook looks at a new model of urban reuse management.

Extra resources to support circular buildings and infrastructure can be found here.

Step 14 – Channel funding and financing to circular projects

Circular projects are often innovative and may have risk profiles that make them more challenging to finance. While access to finance has been an issue in the past, the situation is changing as governments, financial institutions and investors start to recognise the benefits of a circular economy. An increasing range of financial products and services is now available for circular projects in Europe, including public equity funds, bonds, private market funds and loans. At the same time, local governments and administrations can provide grants and other forms of financial support, such as guarantees, to circular entrepreneurs, thus reducing their need for external capital in the early stages and improving their risk profile to facilitate their access to public and private financing.

To channel funding and financing to circular projects, a city should focus on the following actions:

- **Link or facilitate access to different types of funding and financing.** City administrations can act as a link between relevant funders or financiers and different types of circular projects and promoters to improve their access to funding.
- **Support businesses in refining their business cases to improve their bankability.**In some cases, businesses may need support in improving their business case and in communicating it in a clear and convincing way to increase the chances of securing financing. Cities can provide guidance and support on this and ensure that circular and other aspects of projects are properly presented. Providing help in the development of projects may also be needed for larger, more complex projects.
- **Explore whether or not the city can directly support circular projects.** In sectors of public interest, cities can play an important role in providing funding and financing for circular projects, in particular in their earlier stages of development when access to other types of financing may be difficult. This can range from cooperation with private companies in public-private partnerships to spin-offs from municipal enterprises that support development of a circular e conomy ecosystem.

Useful resources

- European Commission - Accelerating the Transition to the Circular Economy: Improving Access to Finance for Circular Economy Projects [report - lessons learnt and recommendations]

This report, produced by the European Commission Directorate-General for Research and Innovation, provides insights and lessons learnt in relation to improving the financing of circular economy projects.

- European Commission - Find your EU Funding Programme for the Environment [guide]

This guide provides a detailed description of the 2021-2027 multiannual financial framework funding programmes and instruments that could support projects that directly or indirectly contribute to the European Union's environmental and circular policies and objectives.

- European Investment Bank - the Circular City Funding Guide [guide]

The Circular City Funding Guide supports municipalities, businesses and other urban actors in creating circular cities by providing guidance for both funders and fund-seekers, as well as general circular city-focused information, resources and case studies. Further information about financing provided by the EIB can be found here.

- SCREEN - how to assess projects' circularity [tool/approach]

The SCREEN project has developed a tool and set of criteria with which to evaluate the circularity of projects. This tool can support the incorporation of circular economy criteria in funding programmes.

- Urbact - resourcing [toolkit]

This toolkit developed by Urbact provides practical guidance and tools to support cities in the use of public funds and financing initiatives. The toolkit provides tools and advice on how to secure funding and use public procurement in a strategic way.

Funding sources

- European Union - Interreg Europe

Invests in innovative and sustainable solutions for Europe and is intended for governments, universities, businesses, development agencies, non-profit organisations and NGOs.

- European Commission - Horizon Europe

Aims to increase Europe's competitiveness by stimulating science and innovation and challenging the business community and the academic world to jointly devise solutions for social issues that are relevant throughout Europe.

- European Union - LIFE programme 2021-2027

A subsidy programme with the aim of supporting innovative projects that fit into European nature, environment and climate policy. The environment sub-programme focuses on, among other things, innovative projects related to circularity.

- European Union - Eurostars

A subsidy for international market-oriented research and development, with focus on innovative SMEs that are cooperating with partners in other countries. Aimed to encourage faster development and growth of SMEs by shortening the time to market for new technologies and reducing related risks.

Extra resources to channel funding and financing to circular projects can be found here.

Step 15 – Communicate on circular progress based on monitoring

To ensure that progress is being made towards a city's circular economy goals and targets, as outlined in the circular economy strategy, indicators should be used for monitoring and reporting on achievements and progress made. Circular indicators and metrics can help circular stakeholders follow the progress made and refocus their efforts on achieving the goals and targets set out in the city's strategy. In addition, monitoring may point to the need to change or intensify efforts on particular fronts. Communicating about progress made, or lack thereof, can help to mobilise new circular stakeholders and encourage them to take action in line with the city's goals.

To improve communication on circular progress and projects, a city should focus on the following actions:

- **Gather and compile data relating to the circular transition.** Data that can be used to monitor progress in the circular transition may not be immediately available. New systems for collecting, compiling and disseminating data related to goals and targets in the circular strategy often need to be established. For example, data on the sources, types and relative quantities of residues and waste generated and the mode of its management are important in developing or refining circular strategies

- **Monitor progress on circular economy metrics.** Progress in the circular transition can be monitored using circular metrics and data. After compiling and analysing data, it should be presented in a way that can be easily disseminated and shared.
- **Communicate for continuous improvement and development.** The progress made and impact achieved in the circular transition should be communicated both to relevant stakeholders and to the public to encourage further efforts and demonstrate positive momentum.

Useful resources

- OECD - The OECD Inventory of Circular Economy Indicators [report]

This includes 474 circular indicators and draws from chapter 5 of the OECD 2020 report The Circular Economy in Cities and Regions. It is intended to be a dynamic tool that will be updated in line with the progress that cities, regions and national governments make in measuring advances in their circular transition.

- Urbact - measuring results [toolkit]

The Urbact initiative has produced a toolkit to support cities in measuring the results of projects, focusing on how to define objectives and indicators and monitor the implementation of a plan.

- Urbact - sharing knowledge [toolkit]

This toolkit, developed by Urbact, provides practical guidance on how to capture key lessons and reflect on the learning from an initiative, as well as how to exchange ideas and knowledge with an audience.

- Urban Agenda Partnership on Circular Economy - Indicators for Circular Economy Transition in Cities. Issues and Mapping Paper [guide/handbook]

A set of indicators is important to support the continued monitoring of the transition to and performance of a more circular economy in cities. This paper, produced under the Urban Agenda Partnership on Circular Economy, presents a consolidated set of circular economy indicators for cities based on a mapping exercise. The paper also highlights the challenges in defining indicators, as highlighted by cities, academics and networks.

Extra resources to communicate on circular progress and projects based on monitoring can be found here.

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Annex 1 – Summary of the 15 circular steps for cities

A summary of **the 15 circular steps** for cities is provided below.

Phase 1 – Prepare and plan

1. **Connect and facilitate cooperation among circular stakeholders**
   - Map local circular stakeholders for possible inclusion in the task team
   - Build capacity on circular economy principles and options for action
   - Leverage/establish local platform(s) for connection and interaction
2. **Characterise and analyse local context and resource flows, and identify idle assets**
   - Compare relevant economic sectors in terms of circular potential and impacts
   - Identify and map existing circular initiatives by the public sector
   - Identify and map existing circular initiatives by the private sector
   - Identify and map idle public assets
   - Investigate and review MFAs for the city and similar cities
3. **Collect good circular examples and learn from other cities**
   - Gain inspiration from circular city case studies and achievements
   - Reach out to inspiring circular project owners and initiatives
   - Join voluntary circular city agreements and support networks
4. **Consider circular options for priority sectors and municipal services and assets**
   - Identify circular opportunities in priority sectors
   - Identify circular opportunities in municipal services
   - Identify how planned municipal projects could be realigned to seize circular opportunities
5. **Craft a circular vision and strategy with clear goals and targets**
   - Co-develop a vision for a circular city together with local stakeholders
   - Describe the linear baseline and related negative impacts
   - Co-develop goals and targets
   - Select circular measures required to meet the agreed goals and targets
   - Agree on timelines, roles and responsibilities for implementation
   - Formulate the circular city strategy

Phase 2 – Facilitate and act

6. **Coach and educate to mobilise people, businesses and civil society**
   - Educate people, businesses and civil society to catalyse action
   - Involve media, educational institutions and NGOs in awareness raising
   - Host outreach and information events
7. **Create an enabling environment for circular businesses and people**
   - Revise/create supportive local legislation and regulations
   - Use economic instruments to encourage circular behaviour

8. Champion and procure circular assets, products and services

- Promote and establish an enabling environment for circular procurement
- Tender for circular assets, products and services
- Review supplier performance in terms of circularity

9. Cultivate and support circular businesses

- Identify opportunities for information and communications technology tools to support the circular transition
- Support industrial symbiosis
- Connect stakeholders via matchmaking platforms and co-location spaces

10. Catalyse circular innovations and support their mainstreaming

- Establish or support circular living labs
- Establish or support circular impact hubs and startup incubators
- Establish circular challenge funds

Phase 3 – Invest and implement

11. Close loops by connecting the generators and potential users of wasted resources

- Identify potential supply sources of residues, waste, water and heat
- Identify potential users of residues, waste, water and heat
- Facilitate connections between suppliers and users of waste, residues, water and heat

12. Care for and re-engage assets to extend their useful life, use and utility

- Assess the circularity potential of idle public assets
- Identify opportunities to re-engage and link idle public assets to current needs
- Identify and link relevant parties
- Develop maintenance plans and budgets for assets to extend their life

13. Construct circular buildings and infrastructure and incentivise others to do the same

- Renovate or construct government buildings in a circular way
- Renovate or construct public infrastructure in a circular way
- Incentivise private developers to renovate and construct in a circular way

14. Channel funding and financing to circular projects

- Link or facilitate access to different types of funding and financing
- Support businesses in refining their business cases to improve their bankability
- Explore whether or not the city can directly support circular projects

15. Communicate on circular progress based on monitoring

- Gather and compile data relating to the circular transition
- Monitor progress on circular economy metrics
- Communicate for continuous improvement and development

The Circular City Centre - C3

THE 15 CIRCULAR STEPS FOR CITIES

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