

LOCAL CIRCULAR ECONOMY ACTION PLAN

DORNBIRN

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| --- | --- |
|  | Version 1  2022 |

***Template Guidance Notes:***

*The Innovation Agenda already developed through the CITYCIRCLE project (CECOMs process) concluded that: “cities should work intensively towards a mission to create integrated bioeconomies that are circular, regenerative, resilient, non-wasteful and healthy.”*

*The purpose of this template is to help city communities to start responding to this challenge by developing Local Circular Bioeconomy Action Plans. Please also refer to the supporting guidance: Circular Bioeconomy Value-Chains: Harnessing Opportunities, as a companion to this template.*

*The primary target audience for this template and attached guidance are the city teams and partners working under the CITYCIRCLE project. The completed Local Circular Bioeconomy Action Plans will become parts of the final CITYCIRCLE project Transnational Circular Economy Strategy.*

*Any other community changemakers interested in creating a local circular bioeconomy should also find value in this template and the guidance document.*

*While this template and guidance have been prepared with a focus on local circular bioeconomies, they are easily adaptable to other circular economy value chains and/or other sustainable development action areas. In this template ‘bioeconomy’ can largely be replaced with another area of interest. Section 4 “Design for Action” of the Circular Bioeconomy Value-Chains: Harnessing Opportunities guidance is equally relevant to Sections 3-7 of this template, even if another circular value-chain or area is chosen as the focus for systemic action.*

*Therefore, in case CITYCIRCLE partners prefer to develop a Local Circular Economy Action Plan that is focussed on a different value chain, this template can be used with minor adjustments. Partners will need to do their own further research into value-chain opportunities to supplement what is provided in Section 3 “Circular Bioeconomy Value-chain Opportunities” of the Circular Bioeconomy Value-Chains: Harnessing Opportunities guidance.*

*Also note that realistically the remainder of the CITYCIRCLE project will not provide sufficient time and resources for project partners to work fully with their community through all the steps discussed in the guidance and sections of this template. CITYCIRCLE project teams should therefore undertake a light version of this process, using available resources and working with a close group of local stakeholders, to develop a first version of a Local Circular Bioeconomy Action Plan. They can then seek additional resources and funding to further test, expand and refine this initial version through wider and deeper community engagement and co-creation processes. As developing a circular bioeconomy must be an iterative process, the best way forward is ‘learning by doing’ from starting to put an initial plan into practice and then improving along the journey.*

*For the Local Circular Bioeconomy Action Plans developed under the CITYCIRCLE project, to keep things simpler the sections and notes highlighted in grey in this template can be skipped or completed at the discretion of the partners for each region. Areas not highlighted in grey should be completed for all regions.*

*The finally unused sections of this template should be removed from the final CITYCIRCLE project deliverable. These can be retained in a parallel version for ongoing development beyond the CITYCIRCLE project.*

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1. INTRODUCTION

The CITYCIRCLE project

*Adjust to local context (or remove if using this template outside of CITYCIRCLE project)*

The CITYCRICLE project aims to bring innovation and sustainable economic growth to peripheral regions of the European Union through implementation of circular economy practices.

This Local Circular Advanced Manufacturing Action Plan for the City of Dornbirn draws on the guidance contained in the *Circular Bioeconomy Value-chains: Harnessing Opportunities report,* and *Innovation Agenda* already developed through the CITYCIRCLE project. Together with other city action plans, this document makes up part of the final CITYCIRCLE project Transnational Circular Economy Strategy.

This action plan elaborates how the Vorarlberg´s innovation community can build on our current assets and take forward the opportunities of developing a world-leading circular bioeconomy in and around our city.

Overview of the City: Dornbirn Context

*Briefly describe the local context in and around the city, as is most relevant to developing a circular local bioeconomy.*

*Refer to the circular economy strategy agreed upon by the stakeholder groups in each of the CITYCIRCLE project target regions (WP1).*

Dornbirn is a city in the westernmost Austrian state of Vorarlberg. It is the administrative centre for the district of Dornbirn, which also includes the town of Hohenems, and the market town Lustenau. Dornbirn is the largest city in Vorarlberg and the tenth largest city in Austria. The city is home to increasing numbers of investments and startups, having a strong economic power, an advantageous geographical location (neighboring Germany, Switzerland, and Lichtenstein), a high quality of life as well as well-connected economic and strategic partners. The economic boom in XX century attracted the textile industry, with textile manufacturing being on the top of manufacturing industry. Today, the city is predominantly home to trade and electronics companies.

The strategic basis for its innovation and location policy is constituted by the economic guiding principles defined by the government of Vorarlberg (Vorarlberg WirtschaftsleitbildVorarlberg) (2014) and the science and research strategy for Vorarlberg 2020+ (Wissenschafts- und For-schungsstrategie Vorarlberg 2020+). In line with the core competencies of Vorarlberg’s economy, the expansion of the financial assistance schemes for science and research in the city context concentrate in the following areas: smart textiles, energy and energy efficiency, humans and technology, education and health, intelligent production. The corresponding action fields of the two strategies are focused on the improvement of the innovation capacity of companies (advisory and support, innovation management), facilitation of access to financing instruments, promotion of entrepreneurial potential, promotion of cooperation and networks especially in the areas of education and qualification, especially with respect to energy and resource efficiency. A special focus is placed on the cross-border transfer of technology and knowledge.

Environmental sectors play a key role in the economy, in which environmental technology sectors are particularly relevant drivers for export-oriented growth. In many areas, Dornbirn has a high environmental performance, covering waste management and recycling, water quality, organic farming and sustainable forestry. At the same time it faces environmental policy challenges, most importantly, regarding climate policy and air pollution. The environmental technology sector is fast-growing and innovative, and Dornbirn continues to have a lead in ecological construction regarding the technology of passive house building and the recycling of waste with respect to construction and demolition processes, in regional context.

Mission Context in City of DOrnbirn

*Describe existing community visions/missions that have already been developed for City of Dornbirn and are relevant to developing a circular local bioeconomy.*

*Refer to the circular economy strategy agreed upon by the stakeholder groups in each of the CITYCIRCLE project target regions (WP1).*

City of Dornbirn offers attractive framework conditions to promote digital innovations in start-ups, companies and administration. By digitizing its services, Smart City Dornbirn enables direct contact with its citizens, going far beyond purely technical digitization with the main goal to improve the quality of life and societal welfare in the long term. Dedicated to delivering solutions promoting sustainable innovation and environmentally friendly atmosphere, the City of Dornbirn highligths circularity as a significant opportunity for utilizing opportunities provided by Vorarlberg, in context of its regional actors. Based on collaboration acitvities between four foundation of helices – industries and SMEs, local and regional authorities, academia and students, and citizens, the City of Dornbirn actively promotes developments of innovative business models that could also induce systemic change and circular transition in long-term. The City of Dornbirn is a member of the Circular Economy Hub Vorarlberg, devoted to the uptake of innovative solutions for becoming increasingly circular, and supporting the process of Austria becoming fully circular by 2050. Thus, the City of Dornbirn devotes its effort to achieve the mid-term and long-term sustainability goals by ensuring accomplishment of the local circular strategy through the following objectives:

• Reducing raw materials use and waste production

• Increased citizen participation in product/service development

• Fostering secondary raw material use

• Stimulate sustainable urban innovation

• Towards conceptualizing circular economy by relevant actors of the quadruple helix innovation system

• Studying EPR (Extended Producer Responsibility) and assistance in supporting the improvements within the scope of the ESG regulations in regional context

• Promoting sustainable circulation and ecologically efficient town structure

• Increase inhabitant responsibility and awareness, and knowledge accumulation on how to enhance positive and alleviate negative impacts of circular transition

• Policy improvements leading towards the goal - Austria becoming fully circular in 2050.

1. Bioeconomy Opportunities

*Note: In case CITYCIRCLE partners prefer to develop a Local Circular Economy Action Plan that is focussed on a different value chain, this is an open option, but partners will need to do their own further research into value-chain opportunities to supplement what is provided in Section 3 “Circular Bioeconomy Value-chain Opportunities” of the Circular Bioeconomy Value-Chains: Harnessing Opportunities guidance. In this case follow the structure of this section, substituting ‘bioeconomy’ for a different value chain description.*

Greatest Local Bioeconomy Assets

Review Section 3: Circular Bioeconomy Value-Chain Opportunities in the guidance: *Circular Bioeconomy Value-chains: Harnessing Opportunities* with a core group of local stakeholders. Reflect on the opportunities discussed, and any others that you know of or choose to research further. Describe what you can identify as the greatest local assets in and around your city that would support developments in each of the following three areas:

Local Food System Assets

Describe the greatest local assets in and around your city that would support development of Local Food Systems (eg. key agriculture, key horticulture, organic waste management sites, biogas facilities, community food-focussed organisations, sources of ‘waste’ food, commercial retailers, community retailers, suitable land, water resources, food-focussed training institutes…)

Integrated Bio-Industry Assets

Describe the greatest local assets in and around your city that would support development of Integrated Bio-Industry (eg. forests, key agriculture, key horticulture, waste heat sources, urban bio-resources, existing bio-industry companies, relevant research centres, industrial areas, key commercial demands…)

Bio-Energy Systems Assets

Describe the greatest local assets in and around your city that would support development of Bio-Energy Systems (eg. wood residues, urban organic waste streams, biogas facilities, district energy networks, bio-refineries, local energy utilities, community energy organisations…)

Current Local Bioeconomy System Mapping

*If possible, work from the above asset lists to develop an initial local systems map/description illustrating how these assets are connected to key community actors and current actions relevant to local bioeconomy development. Describe the process undertaken to develop the map, and key insights resulting from the mapping process – eg. what new assets, actors and actions were identified, what connections were found, what connections are missing, what new opportunity spaces were identified?*

*Refer to the regional mapping for the circular economy transition in each of the CITYCIRCLE project target regions (WP1).*

Local Bioeconomy Priorities

*From the process of collective asset and local systems mapping, what priority bioeconomy opportunities can your team identify for your community? Described these briefly. Why have these stood out as priorities (eg. linked to lots of existing assets, and/or filling a clear identified gap in the local system)? How do they link to the existing community vision/missions/context described above?*

1. Bioeconomy Mission

*Refer to Section 4a: Mission Development in Circular Bioeconomy Value-chains: Harnessing Opportunities for further guidance.*

*Completing this section is optional for CITYCIRCLE teams, but it may provide a useful frame for future work.*

Mission

*Describe the bioeconomy mission statement that has been developed for City of XXXXXX region, building on the mapped assets, actors, actions and opportunities. Describe any linked sub-missions also developed.*

*Describe briefly why this mission was chosen/defined*

Mission Brand

*Outline the Mission Brand that has been developed to communicate the mission across the community and help identify work that is aligned to the mission.*

Mission Propositions

*Summarise briefly the Mission Proposition stories that have been developed during the mission development process. Attach the full versions of these in Appendix 1.*

Mission Development Process

*Describe the process that was undertaken to develop the mission.*

1. Circular Economy and Advanced Manufacturing Plan

*Refer to Section 4b: Action Centres in Circular Bioeconomy Value-chains: Harnessing Opportunities for further guidance.*

*Rename this section and headings based on what you will actually call the ‘action centre’ using the Mission Brand.*

*Refer also to work done under the CITYCIRCLE project WP1: Circular Economy Strategy and Hubs. This section is closely connected to the HUB concepts that have been developed for each region.*

Overview

*Provide a brief overview of the design of the ‘action centre’ with an illustration highlighting leadership, governance and organisation model.*

Circular economy and advanced manufacturing action plan focuses on regional intelligent production systems. Vorarlberg’s intelligent production system aids the economic growth through manufacturing, ICT, Information system activities, Professional, scientific and technical activities. Moreover, scientific domain that that encompasses intelligent production in the context of smart specialization adapts solutions in the field of Industrial production and technology (increasing economic efficiency and competitiveness), improving industrial production and technology, and general advancement of knowledge. Finally, policy objectives focusing on intelligent production support the application of key enabling technologies – such as advanced manufacturing systems, which is the particular focus of circular economy strategy application. Although in Austria there have not been introduced circular economy roadmaps, the country supports transitions towards a green economy by diverse set of instruments that places in focus waste management, energy consumption, mobility and other areas of circular economy application. The action plan builds on the existing policies promoting the transition towards the circular economy in the region: Waste prevention program (“Bundes-Abfallwirtschaftsplan”), Austrian Recycled Construction Materials Regulation, Energieautonomie Vorarlberg 2050 (Energy autonomy V 2050), e5 Programme, Open Innovation Strategy for Austria 2025, Smart Specialization Strategy RIS3.

Based on application of the circular strategy Vorarlberg, the action plan promotes circular economy transition by the means of advanced manufacturing and intelligent production models and technologies through following actions:

• Measurement of new solutions for the circular economy in urban contexts combined with new stakeholder   
networks for innovative, green manufacturing settings

• Promotion of initiatives at policy and entrepreneurial level against the state-of-art, allowing them to be at the   
forefront of new findings and green solutions

• Generating knowledge regarding current challenges and problems in connected green manufacturing

• Setting up of the basis for territorial knowledge and its transferability to other European regions.

Leadership/Governance and Organisation Model

Leadership/Governance Model

*Describe developed plans for an appropriate and robust leadership and governance structure.*

*Define roles and selection process for the people who will be part of Leadership/Governance team. Define their working model and principles of working together and with the Core Team.*

*Develop a Terms of Reference or similar agreement for the Leadership/Governance team, and attach as an appendix*

Mission Contracts

*What partnership agreements, memoranda of understanding, mission contracts or Local Green Deal agreements will be used to bind together core community partnerships and resource contributions in support of the Action Centre model?*

*If possible, attach these agreements as an appendix*

Organisation Model

*Describe the organisational model that will be used for the ‘action centre’ to align leadership and governance with the core team. Will a new entity be set up? Will the model be based on agreements between local partners, and if so what form will these agreements take?*

Core Team

Core Team Model

*Describe planned Core Team structure with role definitions, core principles and planned ways of working. Design to what is needed, not just the funding that is available now.*

*Include an organisation diagram of team roles and relationships*

*Describe planned selection/recruitment process for team members*

Core Team Funding/Resourcing Plan

*Describe how core team will be built up from available current resources and clearly identify funding gaps that need to be filled in order to fully resource the team.*

*Where team members will be seconded from current roles and organisations, describe these clearly and what form of agreement will define these roles (linking to descriptions of partnership agreements / Mission Contracts under Leadership and Governance).*

Community allies

*Describe the likely network of key people who can be called on as needed to help, either professionally or as volunteers, and who will help to build a community movement for change. How are they generally linked to the work?*

*How will this network be developed, engaged and kept engaged?*

Capacity Development Plan

*Describe capacity development priorities and plans for the core team, leadership/governance team and community allies network.*

1. Enablers

*Refer to Section 4d: Enablers in Circular Bioeconomy Value-chains: Harnessing Opportunities for further guidance.*

*Describe plans/ideas for actions that target enablers in cross-cutting ways, the implementation of which will support many other circular bioeconomy actions once the results are in place. Organise these according to enablers of change framework outlined in the guide.*

Collaborative Communities

Community Communication

*Describe planned actions aimed at improving community communication – with a focus on bioeconomy development.*

Citizen Co-creation

*Describe planned actions aimed at improving citizen participation, engagement, imagination capacity and co-creation processes – with a focus on bioeconomy development.*

*How will these processes engage youth and other community groups that are typically difficult to include in such community deliberations and co-creation?*

Collective Management Structures

*Describe planned actions aimed at improving collective community management of civic assets long-term*

*What linked needs for new community business models can already be identified?*

Enabling Economies

Business Models

*Describe planned actions aimed at improving the planning and development of business models around specific actions to ensure successful project delivery and maximise the benefits to the community over time.*

*What needs for new cross-cutting business models in the community can be identified, especially relating to current utility and municipal asset-management models?*

Transformative Investment

*Outline plans for developing a ‘top down’ economic case for the mission*

*Describe plans for developing mission-aligned financing mechanisms for specific actions and regional/city fund models that will help to unlock and manage needed investments*

*Describe plans to leverage public and EU investment programmes*

*Outline plans for developing collective community investment flows*

Economic Structures

*Outline plans / ideas for reshaping local economic structures and systems to better enable scaling of transformational change actions over time.*

*Describe planned actions for supporting entrepreneurship skills, enterprise innovation and business growth to nurture new jobs and supply chains in the local bioeconomy.*

Smarter Systems

Data Commons

*Describe planned actions aimed at improving citizen-centric ownership and management of community data in commons*

Interoperability

*Describe planned actions to develop local standards that will ensure efficient sharing, access and use of data across the community.*

Smart Applications

*Describe planned actions aimed at development of digital applications, which are aligned to priority use-cases/needs of other actions in the portfolio*

Municipal Momentum

Procurement

*Outline plans for helping the local public sector to use their buying power in service of nurturing innovation and accelerating the investment flows needed for portfolio implementation and work towards the mission.*

Policy

*Outline plans for helping the local public sector to turn local policies into powerful enabler of change towards the mission.*

Organisational Readiness

*Outline plans for helping local municipalities to go through a process to reprioritise and reorganise their human resources and decision-making processes to play the strongest leadership role they can in support of the mission.*

*Clearly link to the role for Local Government defined in the developed local Action Centre model.*

1. Process and Portfolio Management

*Refer to Section 4c: Process and Portfolio Management in Circular Bioeconomy Value-chains: Harnessing Opportunities for further guidance.*

Mission Proposition extrapolation

*Describe potential mission pathway scenarios that have been developed by backcasting from the ‘mission propositions’.*

*What do these scenarios identify that must happen in the next few years in order to achieve the mission = what is on the critical path?*

*Are any current local investment plans identified as being incompatible with the mission and therefore need to be halted become they become stranded assets?*

Systems Analysis

*Building on the current local bioeconomy system mapping described under the Bioeconomy Opportunities section, what further systems analysis has been undertaken to help identify and prioritise action and investment opportunities – eg. urban metabolism / material flow studies?*

Near-term Portfolio

*Described plans for projects that already exist in the community and are aligned with the mission, but that are stuck in pre-implementation for some reason.*

*How have you planned to overcome the current barriers holding these actions back, so implementation can be accelerated?*

Strategic Actions & Experiments

Strategic Portfolio Overview

*Summarise in the table below the plans that have been developed for actions and experiments that extend the mission portfolio and build on the developed scenarios and systems analysis. Then outline these in somre more detail in the following sections*

|  |  |
| --- | --- |
| **Action/Experiment Name** | **Brief Description (max 50 words)** |
| *Circular policy improvements* | *Integrating environmental measures into different measures of operational program, and stimulation of green practices into operational performance of companies* |
| *Circularity in production processes* | *Promoting circularity in industrial processes and promoting the role of industrial companies as prosumers* |
| Circular transformation | Increasing recycled content in products and mobilising the potential of digitalization of product information |
| *Cross sectoral collaboratione* | *Synergies and circularity in sectors – production processes and the value chain* |
|  |  |
|  |  |
|  |  |
|  |  |
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*Replicate following sections to describe each planned action/experiment, create as many as necessary*

Action/Experiment 1

*Circular policy improvements:  
Integrating environmental measures into different measures of operational program, and stimulation of green practices into operational performance of companies*

The scope of the action considers improvements at the policy level and active collaboration of companies with other regional actors to ensure circular transition. For instance, companies can benefit from a green supply chain by cooperating with upstream suppliers of environmentally responsible production technology and by exchanging environmental information with them. In addition, considering the views of customers and green consumers in companies` production processes can further the process of further stimulation of the implementation of circular models in industrial processes, and further opportunity to support development of innovation communities by formulating quadruple helix models of product/service delivery. This can be managed by greater integration of environmental measures into different measures of operational program (e.g. sustainable innovation).

Key stakeholders include:

* Vorarlberg Government – Designing policies and programs which stimulate proactive role of companies in managing circular transition. In addition, stimulation of the market which promotes foreign investments in the circular economy models and circular markets. Stimulating private sector investments within the scope of circular economy.
* City of Dornbirn, City of Bregeny, City of Feldkirch – Promotion of the circular eocnomy at the local level; spatial planning alignment with circular economy policies; involving citizens and private sector in the circular-planning processes; monitoring and evaluation of the policy effects devised from higher political level on municipal circular economy policy; management of multilevel municipal networks; monitoring and evaluation of the budgetary situation between municipalities and its role in circular economy initiatives.
* Companies and research institutes
* Citizens.

Action/Experiment 2

*Circularity in production processes:   
Promoting circularity in industrial processes and promoting the role of industrial companies as prosumers*

The scope of the action covers industrial practices as well as improvements at policy level. FHV identifies a cross-sectoral issue related to the development of a circular economy, in particular relationship between circular economy and renewable energy use, and the need to promoting industrial companies as prosumers which would allow them to react more flexibly to changes in business models and advanced manufacturing production.

The following sub-activities are envisioned to ensure accomplishment of objectives:

* Advancing policies that ensure interaction between circular economy and renewable resource use in industrial sector
* Supporting the expansion of a local advanced manufacturing sector by providing new concepts and models for a smoother interaction between circular economy and renewable energy use
* Ensuring a more efficient setting for companies managing circular transition and uptake of circular technologies by governmental subsidies to companies involved in quadruple helix interaction with other regional players.

Key stakeholders include local and regional authorities, industrial companies, as well as research institutes to support the transition process by provision of feasibility studies, models and methods for assessing the circular business model transformation.

Action/Experiment 3

*Circular transformation:   
Increasing recycled content in products and mobilising the potential of digitalization of product information*

The scope of the action entails both industrial transformation, participation of innovation communities targeting knowledge exchange which would lead to higher innovation exposure and faster acceptance of circular products/services. In addition, the action promotes the involvement of academia as a provider of methodologies and tools for advanced models supporting the circular transition, and governments who would aid the process by improvements in related polices and regulations.

Additional areas of high importance include materials, alternative fuels, and batteries - stressing the role of more environmentally friendly materials and circular extraction technologies. Also, the action foresees the development of advanced/innovative materials and fabrication processes to increase lifetime efficiency and facilitate reuse/recycling, particularly focusing on the academic sector boosting research activities.

Additional pivotal perspective corresponds to the role of digitalization in the cross-sectoral terms, i.e. inclusion of cutting-edge technologies to promote smoother exchange between circular and advanced manufacturing technologies, and circular processes for ensuring adoption of particular technologies.

Action/Experiment 4

*Cross-sectoral collaboration:  
Synergies and circularity in sectors – production processes and the value chain*

The scope of the action entails the system-wide transformation of industrial processes within target sectors to unlock economic value and create necessary synergies. The action builds on important strategies and directives, including the industrial Strategy, the SME strategy, circular strategy, as well as open innovation strategy, with the goal to synergize core processes and actions to reach higher levels of circularity among diverse sectors. The action envisions standardization of circular metrics, aiding the process of evaluation of circular practices, ensuring simultaneously larger investments in circular models, processes and value chains. The action identifies the following key sectors to drive circular synergies:

* Electronics and ICT
* Batteries and vehicles
* Plastics
* Textile
* Construction and building
* Financial sector

Key stakeholders include government, industry, and academia.

The implementation of the action particularly considers the role of governments and local authorities in advancing the way thematic call are organized and the selection procedure of circular economy projects – placing the focus on the cross-sectoral collaboration including collaboration within the scope of quadruple helix innovation system. This also refers to the international perspective and different geo characteristics of partners involved in the funding schemes, allowing a more efficient knowledge and transfer exchange. The integration of circular economy models and circular technologies in industrial processes needs to be targeted through different priorities and mechanism of implementation, considering the share of circularity in the gross value added by circular manufacturing models in participating countries. Such process ensures a more efficient synergic performance through promotion and replication of international practices comparable to the specific region.

1. Collective Learning Plan

*Refer to Section 4e: Collective Learning in Circular Bioeconomy Value-chains: Harnessing Opportunities for further guidance.*

Learning Labs

*Describe how regular ‘learning lab’ sessions will be organised to support gathering of important insights and then rapid learning and capacity development as a result - to ensure that change then goes faster and with greater impact.*

Progress and Outcome Evaluation

*Describe what impact and progress indicators will be used, and thus how they will support evaluation and learning.*

1. Appendices

Appendix 1 - Mission Propositions

*Attach favourite ‘mission proposition’ stories developed as part of the mission development process*

Appendix 2 – Action Centre Leadership/Governance Agreement

*Attach Terms of Reference or similar agreement developed for the leadership/governance team of the ‘action centre’ model.*

Appendix 3 – Mission Contracts / Partnership Agreements

*Attach Mission Contracts and/or relevant partnership agreements developed to support the mission process.*