

D 2.1 Analysis and Diagnosis Report

Regional context analysis for conditions for circular economy and industrial symbiosis.

Mission / Sub-mission methodology.

Region of Dalarna (Lead)

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2	Society for the Development of Navarra	SODENA	B	ES	SME
3	Northern Netherlands Alliance	SNN	B	NL	PB
4	Province of Groningen	GRO	B	NL	PB
5	Province of Friesland (Fryslan)	FRY	B	NL	PB
6	Province of Drenthe	DTH	B	NL	PB
7	University of Groningen	UGRO	B	NL	UNI
8	Friesland Innovation Foundation	IPF	B	NL	NGO
9	Region of Dalarna	DAL	B	SE	PB
10	Region of Värmland	VÄR	B	SE	PB
11	Region of Gävleborg	GÄV	B	SE	PB
12	Region of Normandy	NOR	B	FR	PB
13	Ministry of Innovation and Growth	MIGB	B	BG	PB
14	Public Service of Wallonia	SPW	B	BE	PB
15	Innovation Agency Lithuania	IAL	B	LT	PB
16	Helsinki-Uusimaa Regional Council	HURC	B	FI	PB
17	Scottish Enterprise	SE	B	UK	PB
18	Industrial Biotechnology Innovation Centre – University of Strathclyde	IBioIC	B	UK	UNI
19	Association of Cities and Regions for Sustainable Resource Management	ACR+	B	BE	OTH

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LIST OF ACRONYMS AND ABBREVIATIONS

Abbreviation	Description
EC	European Commission
EU	European Union
OECD	Organisation for Economic Co-operation and Development
OPSI	Observatory of Public Sector Innovation (OECD)
TIP	Transformative Innovation Programme, ECIV's interregional innovation strategy
RAP	Regional Action Plan(s)
KPIs	Key Performance Indicators
MS	Member State
NGO	Non-governmental organization
RIV	Regional Innovation Valleys
SDG	Sustainable Development Goals
SMEs	Small and Medium-sized enterprises
WP	Work Package
MOI	Missions oriented Innovation
MIPO	Mission-oriented Innovation Policy Observatory, Copernicus Institute, Utrecht University
MOIS	Mission-Oriented Innovation and Industrial Strategy (UK)
IIPP	UCL Institute for Innovation and Public Purpose
CE	Circular economy

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EXECUTIVE SUMMARY

The European Circular Economy Innovation Valley (ECIV) project is a collaborative initiative uniting 19 partners across thirteen European regions and nine countries, carefully selected for their innovation capacity, dedication to the circular economy, and potential for synergistic collaboration.

ECIV's mission is to drive the creation of a more sustainable and prosperous Europe by transforming traditional EU value chains into interconnected, innovative, and circular systems, ultimately establishing a thriving circular economy ecosystem by 2050.

This transformation is crucial for achieving the EU's climate neutrality goals, supporting industrial transition, strengthening industrial autonomy, and enabling a broader green transformation by significantly reducing waste and decreasing the extraction of raw materials.

The project employs a novel "dance floor" approach to connect stakeholders and facilitate the development of circular solutions to shared challenges within regional industrial value chains.

Work Package 2 (WP2) focuses on developing a transformative innovation program and regional action plans for the interconnected innovation valley. This involves employing a mission-oriented innovation strategy, defining specific sub-missions to address key circular economy challenges. The combined top-down and bottom-up design approach ensures the strategy's validity and sustainability by harmonizing efforts and engaging regional actors.

The project anticipates managing significant changes within the stakeholder ecosystem, including the emergence of new value chains and the phasing out of others, while adapting to diverse policies and cultures.

The project will leverage these diversities to foster innovation.

Key objectives of Work Package 2 include:

- Analysis of existing regional networks, assess ICT maturity, and map circular economy policies to inform innovation programs and regional action plans.
- Analysis of value chain gaps and business opportunities stemming from sustainability requirements to understand the demand for circular solutions.
- Redefinition and evaluation of regional circularity strategies, supporting new value chains
- Formulation of actionable sub-missions (top-down) and prototype strategic project portfolios (bottom-up) representing initial, strategically aligned collections of project concepts that address regional needs and contribute to the overall mission of the ECIV project. This will be done collaboratively with regional stakeholders.

This report presents the initial analysis (M1-M7) of the circular economy conditions within the participating regions. It provides a comprehensive understanding of regional contexts, challenges, and opportunities, encompassing policy aspects, strategic planning, and stakeholder involvement.

The analysis identifies key challenges and opportunities to inform the development of transformative innovation programs and regional action plans (RAPs). This work will continue until M12, culminating in the delivery of the ECIV's interregional innovation strategy, a Transformative Innovation Program (TIP) based on a mission-oriented innovation approach.

Further analysis during months 8 -12 will include gap analysis for new circular value chains within the RAP framework, continuous and in-depth stakeholder mapping, and the exploration of business opportunities informed by ECIV's sub-mission design and the 'Dance floor methodology' (WP3).

Key Findings – conditions for circular economy:

Our analysis reveals a complex interplay of challenges and opportunities in the transition to a circular economy across participating regions, which are widely aligned with EU-wide trends.

Challenges:

- **Skills Gap:** A critical shortage of skilled labour hinders the implementation of circular economy initiatives.
- **Regulatory Barriers:** Inconsistent and fragmented regulations across regions create obstacles for businesses adopting circular models.
- **Business Model Transformation:** Existing linear business models dominate, making the shift to circular models challenging.

Opportunities:

- **Strong Regional Collaboration:** The ECIV project facilitates unprecedented collaboration between regions, creating synergies and leveraging combined resources to overcome challenges.
- **Growing Demand for Sustainable Solutions:** Increasing consumer demand for sustainable products and services creates a strong market incentive for the development and adoption of circular economy solutions.
- **Technological Advancements:** Innovation in areas such as material science, digital technologies, and waste management offer significant opportunities for developing efficient and cost-effective circular economy solutions.

Regional Context:

- **Varied Levels of Circularity:** Significant differences exist in current circularity levels across regions (Circular Material Use Rate, CMUR¹), ranging from 1.3% to 24.5% according to the EEA, indicating a spectrum from frontrunner regions to those with predominantly linear economies. This highlights the need for targeted strategies to address regional specificities.
- **Shared Aspirations and Approaches:** Despite these differences, all regions share a common goal of increased circularity, with existing strategies, guidelines, and financial instruments in place to promote CE. Key focus sectors include construction, food & agriculture, and manufacturing.
- **Smart Specialisation (S3/S4) strategies:** A key asset of the ECIV project is the presence of complementary Smart Specialisation (S3) strategies across the participating regions. This strategic alignment provides a significant advantage in developing an effective interregional innovation strategy, enabling the project to focus on areas of shared strength and build a competitive edge in the circular economy.

The combination of regional diversity and shared challenges, alongside EU-level policy momentum and varying implementation progress, creates both significant opportunities and persistent obstacles in the pursuit of a truly circular economy across the participating regions.

The ECIV project is strategically positioned to address these specific regional needs, leverage existing strategies, and contribute to broader EU-wide circular economy objectives.

The initial analysis phase has established a foundation for ECIV's mission-oriented innovation strategy. The key findings inform the design of targeted sub-missions, providing a clear and unified direction for the project's collaborative efforts. This process will harness the strengths and expertise of each region while proactively addressing common challenges. The resulting sub-missions will guide the development of transformative innovation programs and impactful regional action plans, accelerating the transition to a circular economy and maximizing ECIV's positive influence on the European landscape.

¹ The CMUR measures an economy's circularity. This is defined by the circular use of materials, which is approximated by the amount of waste recycled in domestic recovery plants minus imported waste destined for recovery plus exported waste destined for recovery abroad, divided by the material use. The material use is the sum of domestic material consumption and the aforementioned circular use of materials.

<https://www.eea.europa.eu/en/analysis/indicators/circular-material-use-rate-in-europe?activeAccordion=546a7c35-9188-4d23-94ee-005d97c26f2b>

1. Detailed analysis concerning conditions for circular economy and industrial symbiosis based on common methodology

The initial analysis of circular economy conditions and opportunities for industrial symbiosis across the ECIV regions served a crucial purpose: to prepare for the top-down design of the project's missions in month seven, March 2025.

This early phase of the innovation project presented a number of challenges, including establishing effective work routines among diverse partners with varying levels of circular economy development and navigating differences in data quality and existing analyses. Given the project's timeframe a fully comprehensive, region-specific study including the procurement and creation of harmonised data sets for resource flows, industry turnovers and data-based network analysis for all partners was infeasible.

Therefore, the initial analysis leveraged existing data and analyses, supplemented by soft knowledge from regional representatives and stakeholder input.

To investigate circular economy conditions in the ECIV territories, a self-assessment was conducted using a combination of methods: two surveys, a SWOT analysis, and regional stakeholder workshops. This report **“Conditions for Circular Economy in ECIV Regions – Self Assessment” (Appendix 1)** presents the results of that assessment, focusing on identifying **synergies and patterns across regions** and highlighting observations that prepare for further discussion and analysis.

In addition to the self-assessment, the project team engaged in regular digital work meetings, workshops, and coaching sessions to introduce the mission-oriented process. These sessions, designed to prepare for the regional stakeholder workshops and mission design, explored methodologies such as speculative futures and scenario planning to foster innovative thinking.

More in-depth analyses will be conducted throughout the project on the basis of the interregional Submissions and in support of new circular value chains. The top-down submission design will be iteratively refined through a bottom-up approach involving extensive collaboration with our stakeholders, ensuring a robust and adaptable strategy.

Surveys and SWOT

The survey questionnaire and SWOT analysis were designed to comprehensively assess key aspects of the circular economy landscape in each region.

This included an examination of:

- Policies and incentives
- Strategies, targets and action plans

- Stakeholder mapping and circular practices
- Resource flows
- Funding and financing opportunities
- Local challenges and opportunities.

Feedback on the initial questionnaire led to refinements that broadened the scope to include multi-level policy instruments, industries beyond those specifically mentioned in regional strategies, companies involved in waste valorization, and a detailed mapping of incoming and outgoing resource flows in relation to the ECIV Sub-missions. For each priority sector, the survey also sought to identify specific expertise, key stakeholders, existing technologies for interregional collaboration, major scaling-up needs and challenges, and the role of social enterprises.

Due to inconsistencies in data quality and a lack of harmonized frameworks, empirical evaluation of the survey was limited. Therefore, strategic design decisions for the ECIV sub-missions were also informed by collaboration, reasoning, and negotiation during the top-down design.

The completed questionnaires served as a starting point for regional workshops, providing a basis for verifying challenges and opportunities, complementing the information gathered, and proposing potential synergies and common challenges with other regions. Following the finalization of questionnaires from all regions, a thorough analysis was conducted to identify these synergies and common challenges, informing subsequent project activities.

Key Common Challenges for Circular Economy Transition

The participating regions face several common challenges in their transition to a circular economy. These include:

- **Skills Gap:** A lack of skilled labour hinders the implementation and scaling of circular economy initiatives.
- **Regulatory Gaps:** The absence of harmonized regulations creates barriers to market access and interregional collaboration.
- **Budget Constraints:** Limited financial resources restrict investments in circular economy infrastructure and innovation.
- **Infrastructure Deficiencies:** Insufficient infrastructure, including digital infrastructure, hampers the efficient collection, processing, and distribution of circular resources.
- **Logistical Complexity:** The increased complexity of circular value chains, coupled with inadequate material flow control and traceability, poses significant logistical challenges.
- **Dominance of Linear Business Models:** Existing linear business models outweigh circular alternatives, hindering the adoption of circular practices.

- **Lack of Awareness:** Insufficient awareness and understanding of the potential benefits of the circular economy limit its adoption by businesses and consumers.

Key Common Opportunities for Circular Economy Transition

The participating regions share several promising opportunities to accelerate their transition to a circular economy:

- **Growing Awareness:** Increasing awareness among companies, policymakers, and academia regarding the benefits of the circular economy is creating a favorable environment for change.
- **EU Green Deal Initiatives:** The EU Green Deal and related initiatives, along with new R&D opportunities and synergies with decarbonization activities, present substantial opportunities for funding and collaboration.
- **Collaboration Potential:** Existing platforms, networks, and businesses offer a strong foundation for fostering collaboration and knowledge sharing.
- **Access to Resources:** Access to existing resources and recycling infrastructure provides a valuable starting point for developing circular value chains.
- **Increased Competitiveness:** New markets, industry transformation, and pilot platforms offer opportunities to increase competitiveness through circular economy practices.
- **Expertise and Skills Development:** Opportunities exist to increase expertise and skills in circular economy-related fields through training and education programs.
- **Policy Innovation:** There is potential for policy innovation to harmonize regulations and create a more supportive regulatory environment.
- **Funding Opportunities:** Various funding opportunities are available to support circular economy projects and initiatives.
- **Experimentation and Innovation:** A culture of experimentation and innovation can drive the development of new circular solutions.
- **Dynamic Industrial Sector:** The industrial sector is increasingly open to circular economy practices and is actively collaborating with universities on research and development.
- **Public-Private Initiatives:** Public-private initiatives and regional commitments towards the circular economy provide significant opportunities for collaboration and investment.
- **Public procurement:** as a means of strategically applying resources to circular economy initiatives

Regional Stakeholder Workshops

Eight of the nine participating ECIV regions conducted stakeholder workshops to validate and expand upon the initial circular economy analysis. The intent of these workshops was

to engage regional stakeholders in reflecting on identified challenges and opportunities and discussing local capabilities for moving forward.

The desired outcome was to generate ideas for potential sub-missions that were supported by regional stakeholders, providing the ECIV consortium with valuable insights into regional capabilities to inform the subsequent top-down sub-mission formulation process (March workshops).

WP2 Lead provided a general framework for workshop structure and prepared the workshop agenda, structure, and evaluation materials, acting as support to local facilitators.

Each region adapted the format and methodologies to best suit their specific conditions and contexts, employing diverse approaches. Local regional facilitators led the workshops, sending invitations and arranging the sessions, while regional stakeholders actively participated, sharing their thoughts and knowledge. All methodologies and results were documented for subsequent analysis (see Appendix 1).

The key results from these workshops are summarized below, organized by the two main reflection areas.

Reflection 1: (Inter)regional Analysis

- **Recognition of Challenges and Opportunities:** Stakeholders generally recognized the identified challenges and opportunities.
- **Common Challenges:** These included a lack of awareness and knowledge, financial constraints, regulatory and policy barriers, collaboration and networking issues, and technological/infrastructure challenges as well as the need for new business models.
- **Common Opportunities:** Public procurement, innovation ecosystems and collaboration, development of circular business models, policy and regulatory support, and education/workforce development were highlighted.
- **Reactions to the Analysis:** Reactions varied. Some found the analysis too broad and lacking in detail, while others were interested in the shared challenges across regions.
- **Missing Aspects:** Stakeholders felt the analysis needed more specificity, including sectoral data, regional economic structures, connections between impact and dependencies, and more detailed policy/regulatory information at different levels. The geopolitical context was also missing.
- **Surprising Aspects:** Some regions questioned the national circularity rates presented in the analysis.
- **Most Interesting Aspects:** Developing practical tools (e.g., circular business models), collaborative efforts, sector-specific strengths, and supportive policy frameworks were of particular interest.

Reflection 2: Capabilities

- **Capabilities Needed Moving Forward:**
 - **Collaboration and Networking:** Between industry, municipalities, and research institutions; cross-sector working groups; stakeholder involvement; and facilitating interconnection between companies.
 - **Financial Resources and Support:** For SMEs, developing new circular business models, coaching, impact assessment, funding innovation, and funding instruments for high-risk investments.
 - **Skills and Knowledge Development:** Circularity assessment, design skills, regulatory knowledge, and marketing; developing a toolbox for companies; increasing skills and workforce, especially in repair; and education/workforce development for circular economy skills.
 - **Regulatory and Policy Incentives:** Regulations to encourage circular practices and solutions, and public procurement.
 - **Technical and Infrastructural Support:** Improved waste collection and sorting systems, and scaling-up infrastructure.
 - **Market Development:** For recycled materials, and optimizing value chains within the EU context.
 - **Consumer Awareness and Behavioural Change.**
- **Available Capabilities:** Most regions have partially available capabilities and need to develop and strengthen them. A few regions have high availability due to engaged stakeholders. One region reported low capabilities and a need for external expertise.
- **Stakeholder Ownership:** A 50/50 split among the regions regarding high and partial ownership among stakeholders. However, the tendency to focus on localized problems creates challenges for stakeholders in embracing a broader interregional perspective and planning effective European collaborations to solve shared issues.

2. Diagnoses of the GAPs and opportunities based on existing GAP analysis and analysis of country profiles for circular economy on national (regional) and EU level including strategic European Value Chains.

To contextualize the regional analysis, a comprehensive review of existing Circularity Gap Reports at regional and European levels was conducted, including gap analyses of

strategic European value chains. The key findings are summarized in the report **“GAP analysis and analysis of circular economy country profiles – ECIV” (Appendix 2)**, which identifies existing gap analyses at regional/national and European/EU levels and highlights key insights.

Point of Departure

A **GAP analysis** is a strategic tool used to compare a current state with a potential or desired state. It helps identify the differences (or “gaps”) between the two states, allowing to develop strategies to bridge them. There are no GAP reports on circular economy for all nine regions. We have therefore also included other reports, Circular Economy Country Profiles, with similar content.

Methods and Sources

Two main sources have been used for the compilation of GAP analyses on the regional (& National) level: **Circularity Gap Reports (CGR)** and **Circular Economy Profiles (EEA)**.

On a European (& EU) level, **reports and statistics from EEA** have mainly been used. For value chains on a European (& Global) level, sources include reports from the European Commission, the EU project RegioGreenTex and the One Planet network.

CGR: Circularity Gap Reports

- provides a comprehensive GAP analysis, describing gaps between current and desired circularity with actions and policy recommendations
- published by the organization Circle Economy, which has been working since 2011 to promote a circular economy through research and collaboration

EEA: Circular Economy Country Profile

- not GAP reports, but provide an overview of current state and the way forward, including national policies, best practices and data and statistics compiled by the European Environment Agency (EEA) and the European Topic Centre on Circular Economy and Resource Use (ETC/CE).

Figure 1. Table over existing and accessible reports (Source: Appendix 2)

	North Middle Sweden	Helsinki- Uusimaa	Wallonia	Gabrovo	Normandy	Navarra	Scotland	Lithuania	Northern Netherlands	European level
Full GAP- reports										
	X						X		X	(global)
Country profiles	X	X	X	X	X	X		X	X	X*

Key Insights

Current states regarding CE differ among the regions: Some regions are labelled more as frontrunners, whereas others are still more linear. Circularity rates range between 1.3% to 24.5% among participating regions/nations, according to EEA.

ALL regions have strategies working towards increased circularity: The ‘overarching’ desired state is the same among the regions. All have strategies and guidelines in place for CE, and some have laws steering in this direction. Financial instruments are also used in all regions to promote CE, etc.

Similar sectors are in focus in the majority of regions: This mainly includes the Construction sector, the Food and Agriculture sector, and the Manufacturing sector. Other ‘rather’ common sectors include Energy, Transport and Mobility, and Water.

Similar challenges and needs among the regions: This mainly includes behavioural shifts, harmonization of regulation, strategic planning, development of infrastructure, R&D, economic incentives, and jobs and skills/labour market.

Current state in the EU: The average circularity rate in the EU is 11.8% according to EEA. Europe consumes a higher proportion of recycled materials than other world regions, but improvement has been slow in recent years. Meanwhile, material demand is projected to increase over the coming years.

Strategies working towards increased circularity in the EU: Centred around a life-cycle approach, i.e: reducing raw material demand, activating eco-design requirements, promoting product service system models, extending product lifetimes, and shifting the waste sector to provide high-quality recycled materials for the industry.

Political momentum in the EU: The circular economy concept has gained political momentum in Europe. A comprehensive set of new circularity policies has been introduced at EU level, and national actions have intensified. Many nations are, however, at the early stages of implementation.

Existing and ongoing Research and Development in ECIV Regions

To support network creation and stakeholder involvement, a compilation of existing and ongoing research in the nine ECIV regions was conducted. The results were documented in a report titled “**Research and Development in the ECIV Regions**” (**Appendix 3**), which focuses on identifying prevalent research areas and topics within the regions.

3. Methodology for the top-down formulation of ECIV Sub-missions

Early dialogue with the Missions oriented Policy Innovation Observatory at the Copernicus Institute, Utrecht (MIPO), the OECD Observatory of Public Sector Innovation (OPSI) and Vinnova, Swedens Innovation Agency focused on adapting mission-oriented innovation (MOI) principles to **the unique context of the ECIV project**.

The dialogue with MIPO showed that the TransMission framework, typically used for aligning regions within a single country, was deemed unsuitable due to the diverse scales and circular economy maturity levels of the ECIV partner territories.

Instead, the ECIV project will leverage the common European goal of transitioning to a circular society, focusing on stimulating innovation through open call funding for circular projects across the territories.

This approach emphasizes:

- Defining sub-missions that address real-world challenges (e.g., securing critical raw materials)
- Considering the interconnectedness of regional ecosystems from a mission perspective.
- Fostering collaboration across sectors to address bottlenecks and build circular value chains.
- Viewing initial projects as building blocks and prototypes towards larger-scale solutions and system demonstrators.
- Allow for development on different speeds, create a variable geography, harness energy from all partners.
- All (partners) need to be represented.
- Use criteria for missions to ensure they are actionable.
- Create a "Theory of Change" – from Mission into practice

Key considerations for designing effective ECIV missions include:

- Missions should be broad enough to attract attention and stimulate innovation.
- Missions should address interregional challenges and opportunities that are relevant across multiple regions.
- Missions should align with circular economy principles and contribute to resource efficiency.
- Missions should encourage collaboration across different sectors.
- Missions should address the most pressing challenges identified by the regions.

Best Practices

Inspiring examples of mission-oriented approaches

Mission-oriented approaches are transforming how governments and institutions address complex societal challenges, from climate change to technological transformation. By setting clear, ambitious goals and mobilizing resources across sectors, these strategies drive systemic change and innovation.

In this section, we highlight three examples that have informed and inspired ECIV's method for designing Missions: The European Union's five missions, the UK Industrial Strategy, and Impact Innovation – Sweden's transition to a sustainable society.

The European Union's five missions

The European Union has incorporated five key missions into its €100 billion Horizon Europe research and innovation program (2021–2027). These missions focus on climate change adaptation, cancer, healthy oceans, climate-neutral cities, and soil health, see below². Designed to tackle complex societal challenges, they aim to deliver tangible solutions by 2030 through cross-sector collaboration, policy alignment, and public engagement.

The 5 EU Missions are:

- Adaptation to Climate Change: support at least 150 European regions and communities to become climate resilient by 2030
- Cancer: working with Europe's Beating Cancer Plan to improve the lives of more than 3 million people by 2030 through prevention, cure and solutions to live longer and better
- Restore our Ocean and Waters by 2030
- 100 Climate-Neutral and Smart Cities by 2030
- A Soil Deal for Europe: 100 living labs and lighthouses to lead the transition towards healthy soils by 2030

The Missions were developed through an **extensive consultation process involving experts, policymakers, industry leaders, and citizens**. The European Commission established Mission Boards, each composed of specialists from various fields, to define concrete objectives. These boards engaged in dialogue with stakeholders and citizens across Europe to ensure alignment with societal needs. The final Missions were officially announced in 2021, with a strong emphasis on achieving measurable impacts by the end of the decade.

Each mission receives dedicated funding within Horizon Europe, complemented by national and regional initiatives. Success relies on close collaboration among governments, businesses, researchers, and citizens, with continuous monitoring to ensure

² https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/eu-missions-horizon-europe_en

accountability and adaptability to emerging challenges. Each mission functions as a portfolio of coordinated actions—including research projects, policy measures, and legislative initiatives—designed to achieve a measurable goal that individual efforts alone could not accomplish.

The UK Industrial Strategy

In the UK, the concept of mission-oriented innovation has been central to **the government's Industrial Strategy**, particularly in addressing grand societal challenges and **driving long-term economic growth**. The Industrial Strategy was launched in 2017 and included several key missions aimed at improving productivity, driving innovation, and tackling major societal issues. These missions are designed to guide public and private sector collaboration toward achieving specific, measurable outcomes by 2030.

When the UK Industrial Strategy was first introduced it initially focused on four missions: Clean Growth, AI and Data Economy, Future of Mobility and Ageing Society.

The missions were identified in the Government's Industrial Strategy white paper through the lens of the mission-oriented innovation framework, identifying relevant cross-sectoral actors, bottom-up projects, and paths to delivery. However, since its initial implementation, the UK government has expanded the scope of the mission-oriented framework, including the addition of a fifth mission, Zero-Carbon Energy.

As part of UK government's Industrial Strategy, the Mission-Oriented Innovation and Industrial Strategy (MOIIS) framework was developed by the UCL Institute for Innovation and Public Purpose (IIPP) to guide the implementation of mission-oriented approaches to innovation and industrial transformation.

While the Industrial Strategy sets out specific missions, the MOIIS provided the theoretical foundation and a more detailed methodology for implementing mission-oriented approaches to innovation and industrial transformation. MOIIS emphasized the role of the state in driving and coordinating innovation across sectors, ensuring that public and private efforts work together to achieve ambitious societal goals. The framework encourages long-term systemic change through collaborative innovation, policy alignment, and public engagement, shaping the UK's approach to its mission-driven strategy.

For each mission, the MOIIS Commission supported the government in refining mission frameworks to establish a bold and clear roadmap. By emphasizing cross-sectoral projects, the Commission aimed to stimulate innovation in ways that directly contribute to achieving each mission's goals.

The roadmaps developed under the MOIIS framework are not restrictive recommendations but rather illustrative guides that define the scope, methodology, and ambition of each mission. They highlight the need for diverse solutions and a broad range of policy drivers to drive progress. Figure 1 illustrates an example of a roadmap for the Future of Mobility mission.



Figure 2. The 'Future of Mobility' grand challenge (MOIIS Commission, 2019). Källa: Mazzucato, M., & Dibb, G. (2019). Missions: A beginner's guide. *UCL Institute for Innovation and Public Purpose, Policy Brief series (IIPP PB 09)*

Impact Innovation – Sweden's transition to a sustainable society

Impact Innovation is an initiative that focuses on tackling some of the most significant challenges of our time. With a clear mission of creating a transformed, sustainable, and competitive Sweden, the initiative tackles complex societal issues through collaboration, innovation, and ground-breaking solutions. The goal is to develop innovative solutions that address real-world needs and drive the transition towards a sustainable future.

Impact innovations launched as a joint effort by the Swedish Energy Agency, Formas, and Vinnova, Impact Innovation is anchored in Agenda 2030 and the EU's social and environmental goals. The initiative aims to accelerate Sweden's transition to a sustainable society, strengthen its global competitiveness, and reinforce its position as a leader in innovation.

At the heart of Impact innovation is a mission-oriented approach to tackling some of the

most pressing challenges in society. The initiative gathers actors from diverse sectors—businesses, industry organizations, academia, research institutes, municipalities, regions, and civil society—to collaborate in ways that exceed short-term business interests. This approach emphasizes bold, long-term commitments to drive transformational change and systemic impact. Impact Innovation’s efforts are structured around five key programs that address different aspects of sustainability and societal transformation. Each program focuses on a particular challenge, working towards innovative solutions that can create broad, systemic change: NetZero Industry, SustainGov, Metals & Minerals, Shift Sweden and Water Wise Societies³

An example of this approach is seen in Water Wise Societies. Water Wise Societies works to ensure that water is available in the right quantity and quality, and that it creates good conditions for people, the environment, ecosystems and industries – despite a changing climate. Their mission is Sustainable water for all by 2050. However, to make the mission more **tangible and actionable it has been refined into three specific sub-goals or sub missions.**

The sub mission and its descriptions⁴ aim to set the direction for the program while engaging and mobilizing stakeholders for collaboration and joint action in the transition:

1. Wise Water Use
2. Resilient Water Supply and Management in Society
3. Healthy Lakes, Waterways & Groundwater

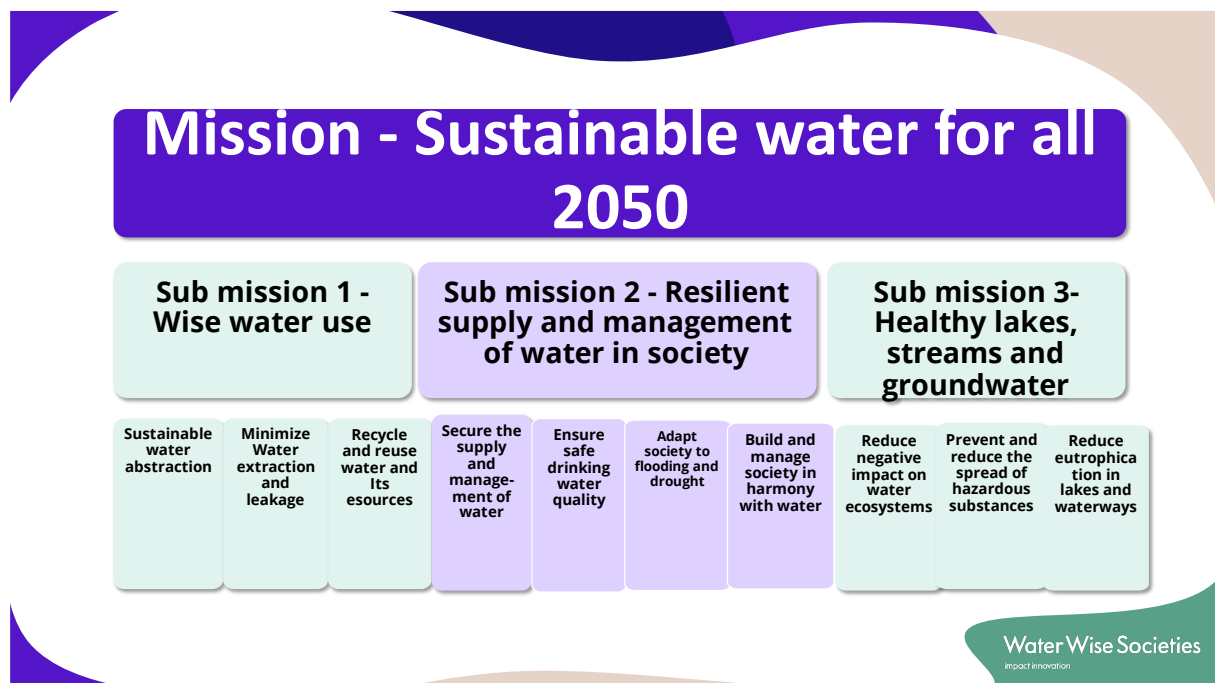


Figure 3. Water Wise Societies mission, sub-missions and tasks

³ <https://impactinnovation.se/en/programmes-overview/>

⁴ <https://waterwisesocieties.se/delmal/>

Each sub-goal is further detailed through specific descriptions and tasks. In total, 10 key tasks outline the current state, the desired future, and the necessary (system) changes to drive the transition. These tasks mobilize stakeholders, fostering collaboration and collective action. By addressing them, Water Wise Societies advances its sub-goals and contributes to achieving its overarching mission.

ECIV and the mission-oriented approach

After analyzing and understanding the different mission-oriented approaches employed the ECIV project has recognized the Water Wise Societies methodology as a valuable model for **driving systemic change**. Inspired by this, ECIV aims to adopt a similar mission-driven strategy to advance the transformation of the circular economy. This approach focuses on setting clear, specific sub-missions that provide strategic direction, ensuring that efforts are both actionable and measurable. By aligning stakeholders around a common mission, ECIV aims to mobilize diverse sectors to interregional collaboration and take collective action. These sub-missions will serve as guiding frameworks, fostering the engagement of stakeholders and enabling long-term, impactful change within the circular economy.

ECIV Mission-Method

The ECIV project has adopted a mission-oriented approach in its work to develop an Interregional innovation valley to drive transformation of towards a circular economy ecosystem in Europe. The mission-oriented approach is fundamentally about setting a clear direction for a broad mobilization of perspectives and resources towards a common goal. The ambition is to understand and change how today's system of factors and actors works and how it affects the prevalence of a challenge. The system perspective means that we look at wholes instead of individual parts.

It is an inherently iterative approach, grounded in a systemic understanding of the issue, which clearly defines problem, goal frames, and embraces experimentation.

Mission-driven innovation consists of four interconnected activities:

1. **Mobilize** across sectors to create shared understanding of the challenge – Engaging a broad range of expertise to define the problem from multiple perspectives.
2. Setting a transformation goal to **direct** efforts– Aligning efforts toward a shared objective that enables cross-sector collaboration and diverse solutions.
3. **Coordinating** and executing actions in a portfolio– Leading, managing, and implementing initiatives to achieve the mission.
4. **Learning** and scaling – Continuously adapting based on insights and expanding successful approaches.

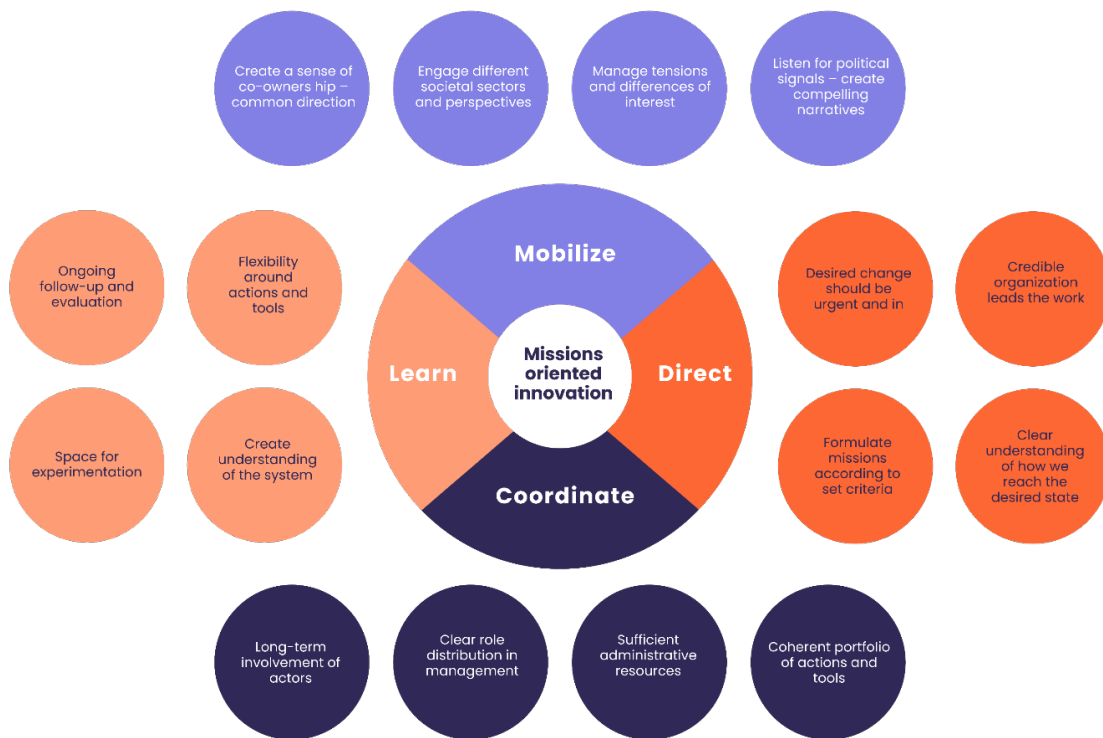


Figure 4. The four fundamental parts of the missions-oriented approach. (Source: <https://www.isi.fraunhofer.de/content/dam/isi/dokumente/> adapted by Ramboll and ECIV)

Creating an understanding of the current system

As part of defining a direction for the efforts in the ECIV project, the project started by analyzing the current state and ambitions in each region through looking at current policies and strategies for circular economy as well as identifying main challenges and opportunities in their current systems.

In the analysis a model describing five perspectives of a socio-technical system (figure 2) was suggested to ensure a comprehensive analysis of the system.

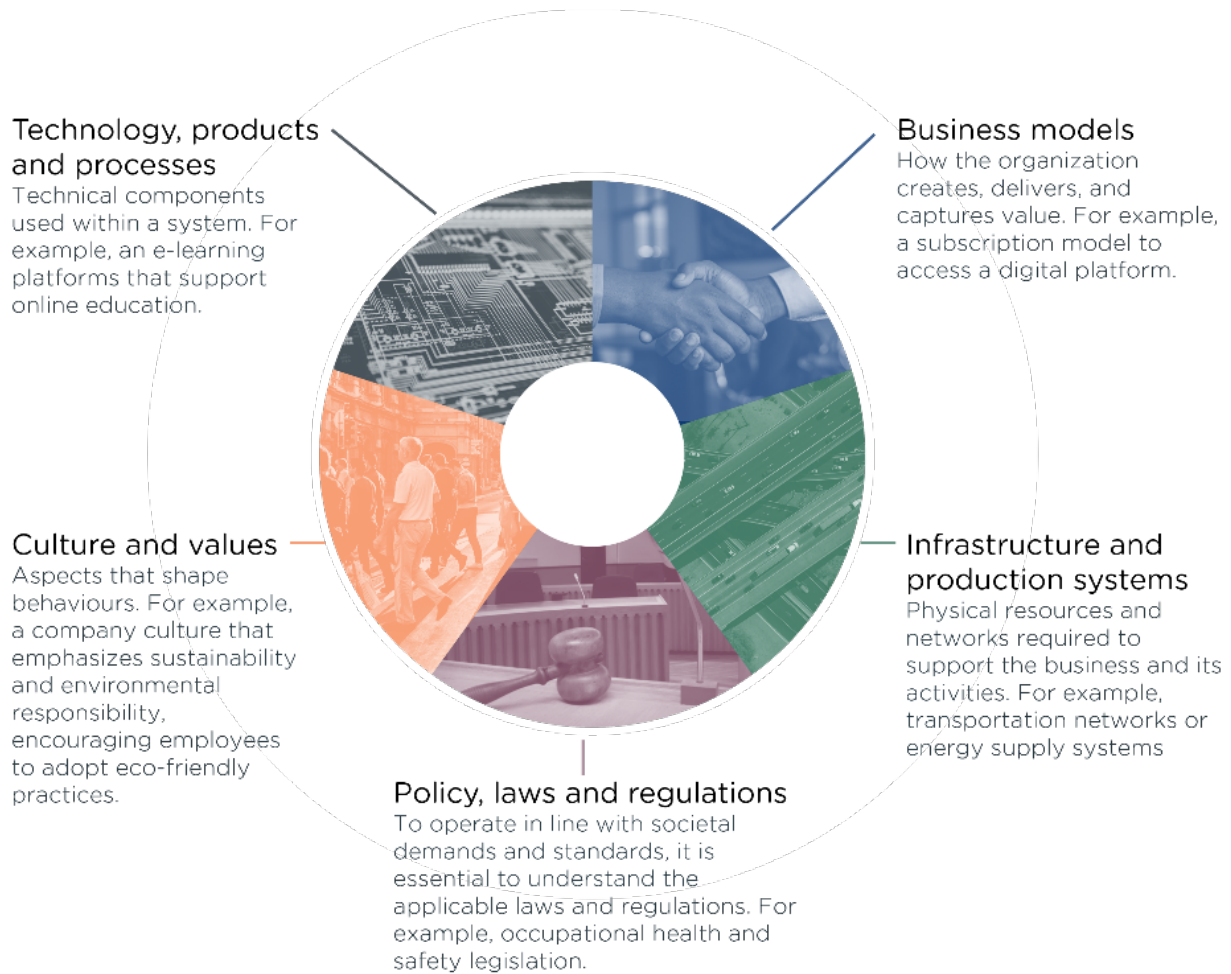


Figure 5. Five perspectives in a socio-technical system. (Source: Ramboll)

The depth of the analysis varies between the regions based on their different starting points. However, the analysis has created an understanding of each region's current state and highlighted opportunities between regions. The shared understanding of each region's current state has also fostered understanding and empathy between regions regarding their individual starting points.

The material from each region and their individual system analysis were then compiled into an interregional analysis showing shared focus areas, challenges and potential opportunities among the ECIV regions.

Stakeholder engagement to identify potential tensions and facilitate future co-ownership

To ensure the understanding of the system and its' challenges and opportunities are in line with the understanding of stakeholders and actor and to create an understanding for needs and drivers among stakeholders each region conducted workshops or focus group interviews with stakeholders. This validated the regional analysis as well as the interregional analysis and gave regional representatives an understanding of priorities

among their local stakeholders.

The results of this regional stakeholder engagement were presented for the other regions, building a shared understanding of current state of the combined system around circular economy with the ECIV regions. The results also contributed to the further development and detailing of the interregional analysis.

Through the initial desktop analysis and stakeholder involvement, the regions have developed an understanding of the overall system as well as their local systems. This understanding has been built through mobilization activities, such as examining signals in strategies to identify areas with the potential to create a sense of co-ownership. The stakeholder involvement has enabled identification of potential tensions between different interests and created conditions for formulating missions that feel relevant and engaging.

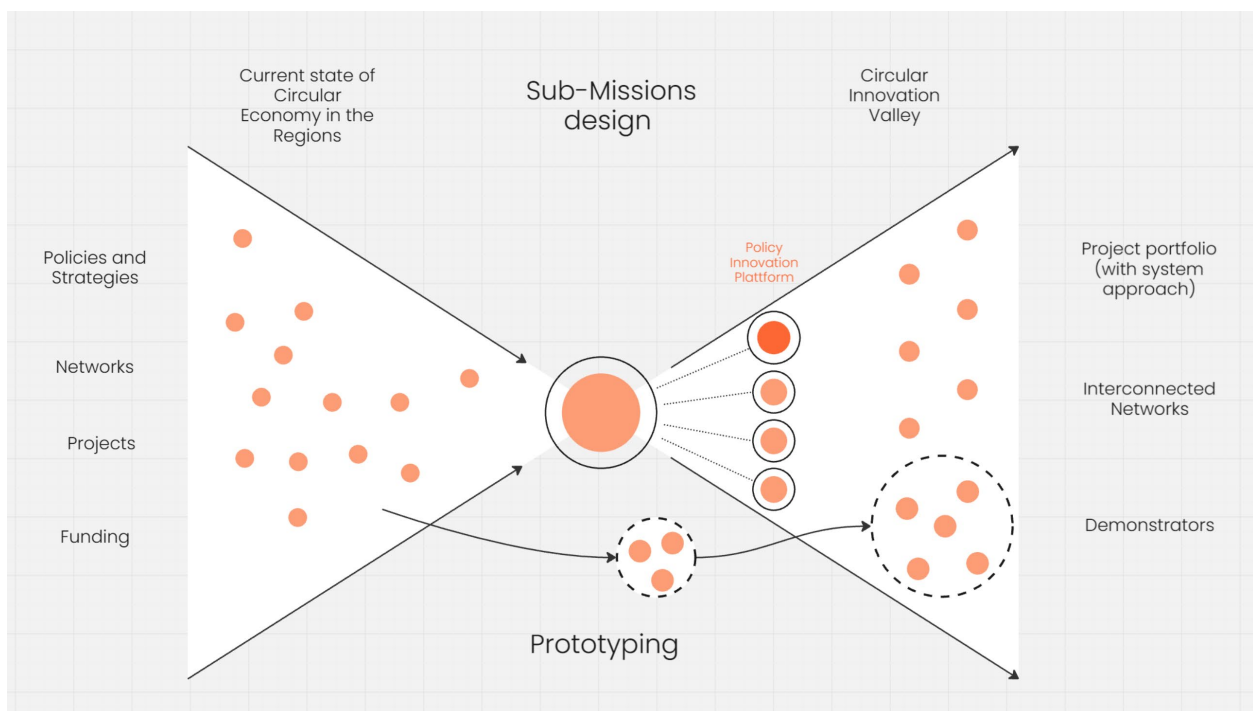


Figure 6. Model describing the ECIV top-down Sub-missions design process. (Source: adaptation of an innovation funnel based on "The Impact Entrepreneur: Building a New Platform for Economic Security in Work" Rowan Conway, Charles Leadbeater & Jennie Winhall, The RSA, 2019)

Designing Missions

"Mission-oriented innovation has the potential for transformative systemic change. Yet it cannot deliver without fundamentally innovating the ways in which we innovate. "

"There is always a design phase; the issue is whether it is done consciously or not. An unconscious design phase is likely to be full of assumptions, missed opportunities and

limited engagement. It will tend to reinforce business-as-usual rather than transformation, and negative outcomes rather than positive co-benefits. We must instead define and engage an active and participative design process for missions.”

(Source: Designing Missions- Mission-oriented innovation in Sweden— A practice guide by Vinnova, 2022)

It is crucial to define and actively engage in a participative design process for missions. Within the ECIV project, this necessitates the creation of a safe and trusting space where diverse participants can collaborate. Given the varied backgrounds, perspectives, and expertise within the consortium, fostering a sense of psychological safety is paramount. This requires dedicated time and resources for in-person meetings and on-site collaboration, enabling participants to build trust, share ideas openly, and engage in the creative and innovative thinking necessary to achieve the project's ambitious goals. Only through the deliberate cultivation of such an environment can we unlock the full potential of mission-oriented innovation and drive meaningful change. In direct support of this principle, a two-day on-site design workshop was conducted during ECIV's consortium meeting in Borlänge, Sweden, providing a dedicated space for collaborative design and innovation.



ECIV partners participating in the workshops on the 25th and 26th of March in Borlänge, Sweden

Define shared transformational goals

ECIV's overall mission of transformation to a European circular economy eco-system is ambitious but not achievable within the timeframe of the ECIV project. The overall mission will give the project a direction, but as it will still be abstract in relation to the project timeline it can be difficult to direct the work within the project as it implies mobilizing actors and coordinate a portfolio of actions and tools that go beyond the project timeline. The project has therefore defined a set of sub-missions with a deadline that aligns with the project deadline and work as steppingstones towards the overall mission. Giving the project clear transformational goals that are achievable within the project timeframe.

The ECIV project works over three horizons of change (figure 7). The regional and

interregional analysis has given an understanding of the current system and the conditions that manifest this state (A). The sub-missions will support enablers (B) and opportunities (C) in the transition zone as the conditions of the future system develops.

Three horizons of change

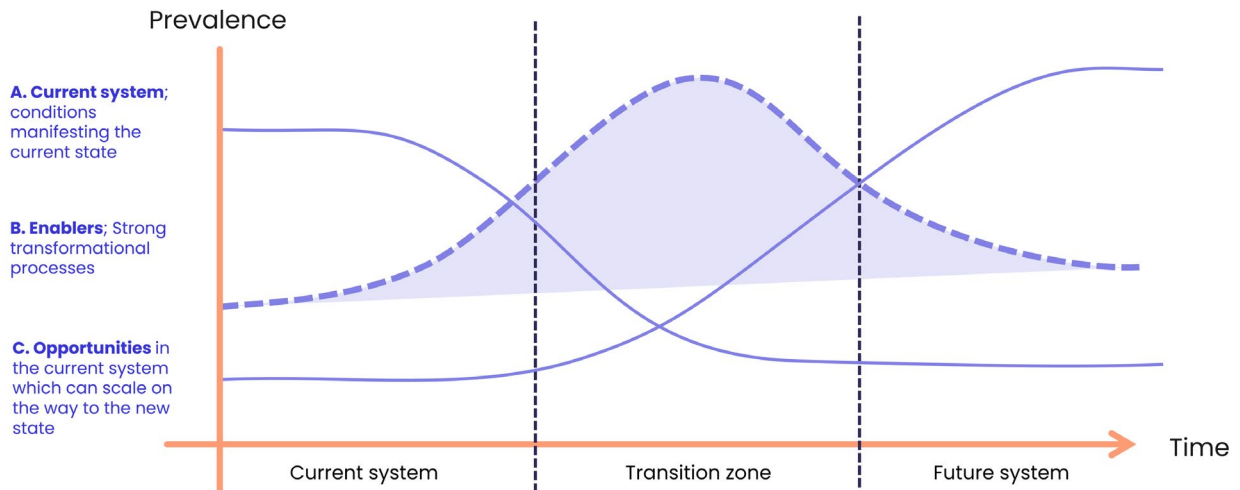


Figure 7. Three horizons of change. (Source: Sharp et al, (2016) *Three horizons: a pathway practice for transformation*)

To have a shared vision of what future the sub-missions should aim to contribute towards, a desired future scenario describing the future system with a European circular economy eco-system and its' effects in 2050 was introduced. The scenario was described based on the overall EVIC mission and the shared focus areas identified in the interregional analysis of the circular economy system.

With this share vision of what a European circular economy eco system entails and what values it would create, as a base, sub-missions were developed and defined.

In a co-workshop regional representatives were first tasked to describe desired futures for the year 2029 given the speculative narrative of the future in the year 2029. What does the future look like in 2029 if the transformation should reach the speculative scenario by 2050. After this a set of sub-missions were formulated based on the scenarios and the understanding and knowledge of the current system. The sub-missions describe measurable transformational goals for 2029, that would engage actors from multiple sectors and drive the overall transformation towards the 2050 scenario.

Lastly the regional participants reviewed and iterated the sub-missions to ensure they were relevant given the desired future and the identified challenges, had a concrete goal that would be achievable and possible to follow up on by 2029. The missions were also reviewed based on their potential to engage actors across various sectors.

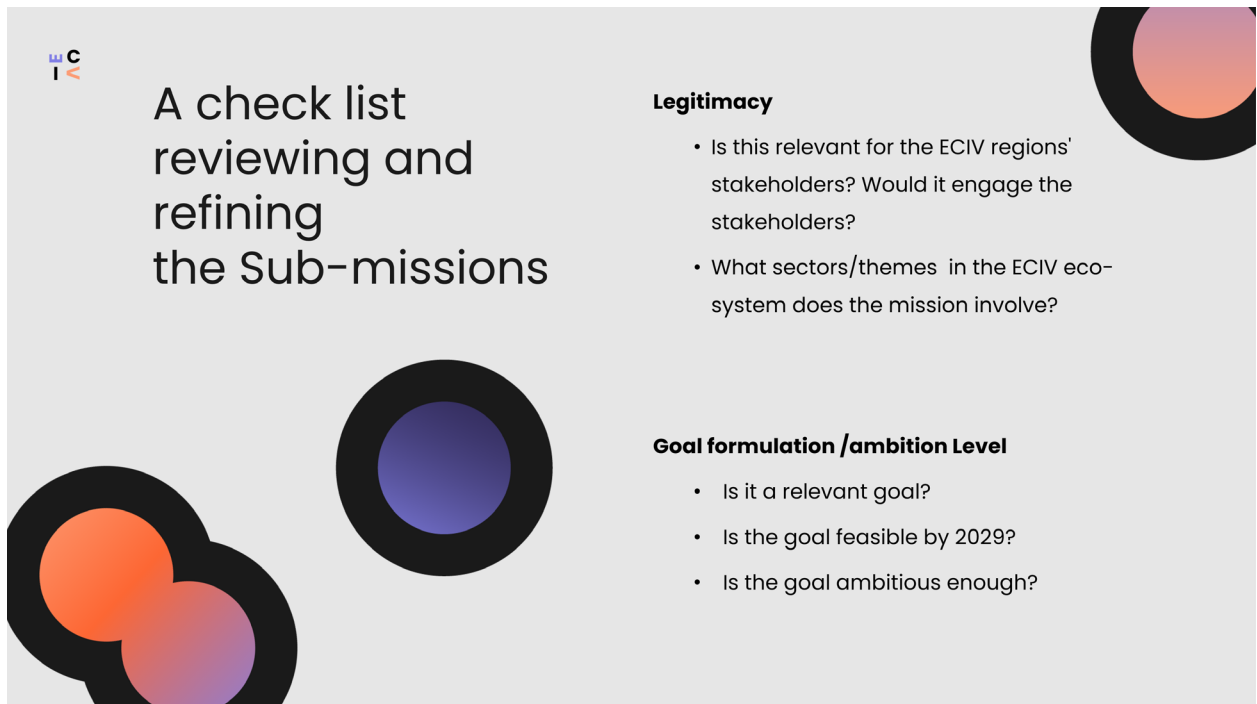


Figure 8. Checklist used for Sub-mission design. (Source: Wittmann, F.; Hummler, A.; Posch, D.; Lindner, R. (2024): Missions with Impact: A practical guide to formulating effective missions. Bertelsmann Stiftung, Sustainable Social Market Economies, Gütersloh. <https://doi.org/10.11586/2024078>)

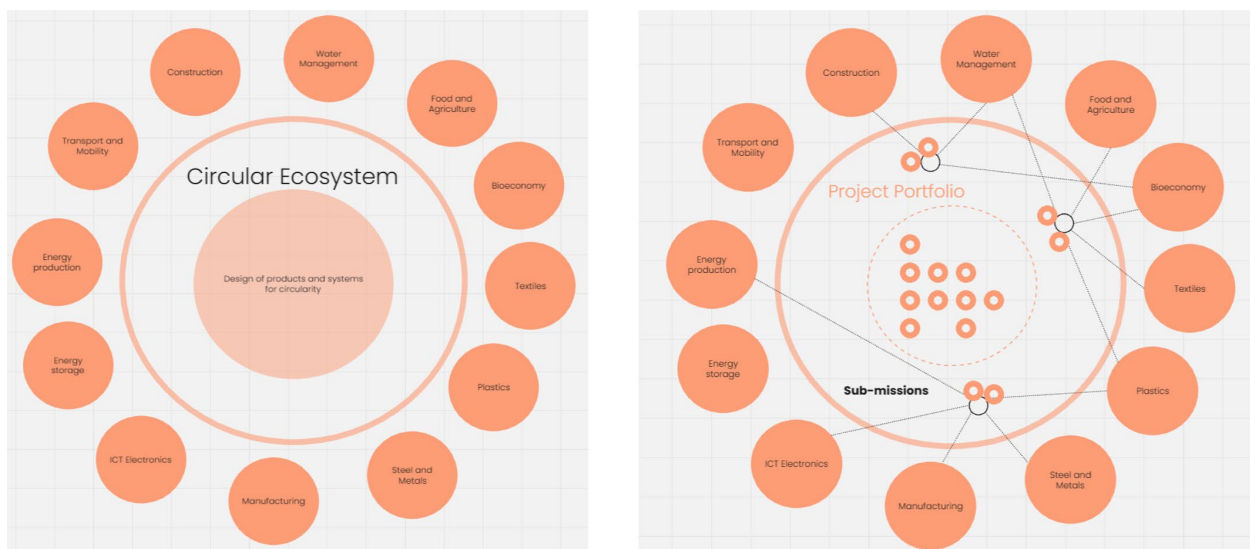


Figure 9. ECIV Circular Ecosystem Design. ECIV, WP2.

ECIV Sub-missions: Top-down proposals

Workshop results 25th and 26th March 2025:

- 1a – By 2029 the level of industrial symbiosis should have increased by X % from starting point.
- 1b – By 2029 every region has identified or developed at least 3 new opportunities for industrial symbiosis.
- 2 – By 2029 "to design out waste" is an integrated policy in all ECIV Regional action plans.
- 3a – By 2029 the extraction and import of virgin raw materials should be decreased by X% from starting point.
- 3b – By 2029 the use of secondary raw materials should be increased by X% from starting point.
- 4 – By 2029 X% of products manufactured in the region should be based on product-as-a-service business models.
- 5 – Agrofood systems or Food production should have reduced waste by X% from the start-point by 2029.
- 6 – Circular metals and minerals should have increased the reuse of critical strategic materials in EU by X% from starting point by 2029.
- 7a – In 2029 packaging should be X% circular (or 100% circular in 2040)
- 7b – In 2029 packaging in food production and consumption should be 100% circular
- 8 – By 2029, the use of biobased materials in construction (or building?) should have increased by X% from starting point.
- 9a – By 2029 Valorisation of by-products should have increased by X% from starting point.
- 9b – Increased Valorisation of by-products from steel production by x% from starting point by 2029.
- 10 – By 2029 the use of fresh water in industrial processes should be reduced by X% in ECIV regions.
- 11 – In 2029 waste from textile production will be reduced by X% from starting point.
- 12 – In 2029 we have developed net innovative Electric & Electronic waste processes for an efficient to reuse, reduce, recycle, refurbish, repair-replicable at local scale.
- 13 – In 2029 revenues from circular business has increased by X% from starting point.

The sub-missions will be further iterated and detailed in collaboration with work package three, where stakeholders and other actors within the system will be mobilized to discuss

the ambition and goals of the missions in a bottom-up approach. This will be done both to ensure the final missions are engaging and to develop a sense of co-ownership of the defined direction.

The ECIV project leverages a combined top-down and bottom-up approach to mission design, ensuring both strategic alignment and practical relevance. The process begins with the top-down formulation of sub-missions, drawing upon academic research and the collective experiences of the participating regions. These initial sub-missions are then validated and refined through extensive stakeholder engagement, actively involving Quadruple Helix actors.

This bottom-up process results in an interregional missions-oriented innovation program (TIP) and regional action plans that are directly responsive to the needs and capabilities of local stakeholders. This integrated approach is crucial for ensuring that the missions are not only grounded in research and strategic priorities but also are effectively tailored for implementation and impact within the diverse regional contexts of the ECIV project. By combining these perspectives, ECIV maximizes the potential for achieving transformative change and fostering a truly circular economy.

Based on the defined sub-missions the ECIV project will create and coordinate a portfolio of actions and tools to achieve the goals of each sub-mission. This will both be done through calls for projects as well as regional actions to, for example, develop and maintain structures enabling stakeholder mobilization and engagement.

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