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CIRCOTRONIC

Report on Performance of Regional Circular Labs and Transnational Network

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1. Introduction

This report documents the performance of the regional Circular Labs and of the transnational Circular NET-LAB network established within the CIRCOTRONIC project. The report builds upon Deliverables D.2.3.1 Establishment of regional circular labs for EEE, D.2.3.2 Establishment of the transnational network of circular labs for EEE, and D.2.3.3 Platform.

The purpose of this report is not only to document the establishment of the labs and network structures, but also to analyse how these structures functioned in practice, how they supported project implementation, and how they were tested in real-life regional environments. Particular attention is given to the role of the labs in supporting SME piloting activities, stakeholder cooperation, knowledge transfer, awareness raising, and transnational exchange related to circular economy approaches in the EEE sector.

The Circular Labs were developed as flexible regional ecosystems connecting business support organisations, research institutions, clusters, policymakers, NGOs, companies, and other stakeholders working on circular economy solutions for EEE manufacturing and e-waste value chains. While some partners established or upgraded physical lab infrastructures, others implemented hybrid or network-based approaches adapted to their regional conditions and existing ecosystems.

Building on these regional structures, the partnership established the transnational Circular NET-LAB network as a collaborative framework enabling knowledge exchange, peer learning, dissemination of solutions, and long-term cooperation across Central Europe. The network was further supported through a dedicated digital platform, virtual exhibition, and LinkedIn community, strengthening visibility, accessibility, and interaction between regional labs and external stakeholders.

This report therefore focuses on evaluating the practical performance, added value, outreach, and sustainability potential of the regional labs and the transnational network based on their implementation and operational activities throughout the project period.

2. Concept of the Regional Circular Labs

2.1. Objectives of the Labs

The Regional Circular Labs were established as practical support structures aimed at accelerating the circular transition within the Electrical and Electronic Equipment (EEE) sector in Central Europe. Building on the concepts developed in previous project activities, the labs were designed to provide an operational environment where stakeholders could jointly develop, test, transfer, and promote circular economy approaches adapted to regional conditions and needs.

A key objective of the labs was to support SMEs in addressing circular economy challenges related to EEE manufacturing, product use, repair, reuse, remanufacturing, recycling, and e-waste management. Through workshops, consultations, piloting activities, stakeholder meetings, and awareness actions, the labs served as facilitators for knowledge transfer and practical implementation of circular solutions.

The labs also aimed to strengthen cooperation between quadruple helix stakeholders, including SMEs, business support organisations, research institutions, clusters, policymakers, NGOs, and innovation actors. By connecting different regional stakeholders, the labs created ecosystems supporting collaboration, exchange of expertise, and identification of synergies relevant for circular transition processes.

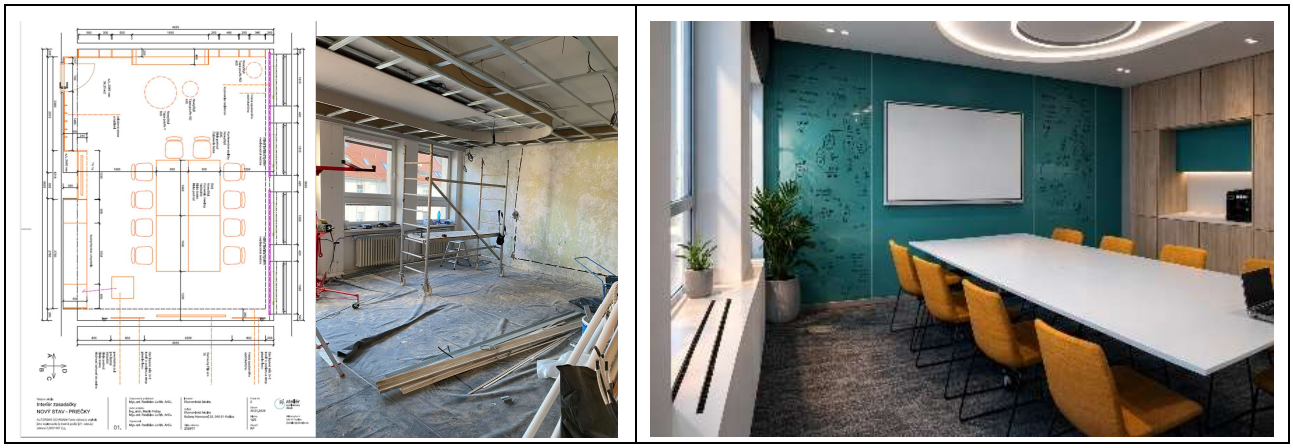
Another important objective was to support the piloting and transfer of project tools, methodologies, and approaches developed within CIRCOTRONIC. The labs provided a real-life environment for testing circular transformation tools and for adapting project results to regional and sector-specific contexts. In this way, the labs acted both as implementation and capitalisation structures contributing to the practical uptake of project results beyond the partnership itself.

2.2. Diversity of Lab Models

One of the key strengths of the Circular NET-LAB approach was the diversity and flexibility of the regional lab models established across the participating countries. Rather than applying one fixed structure, the project allowed partners to adapt the lab concept to their regional ecosystems, institutional capacities, stakeholder networks, and existing infrastructures.

Several partners established or upgraded physical lab infrastructures that served as dedicated spaces for workshops, meetings, demonstrations, stakeholder exchanges, and circular economy activities. These physical labs provided visible regional hubs supporting cooperation and interaction between stakeholders. Particularly strong examples included the circularly renovated “green idea lab” established by CCIS and several technology-oriented infrastructures developed by project partners.

Physical lab structures established

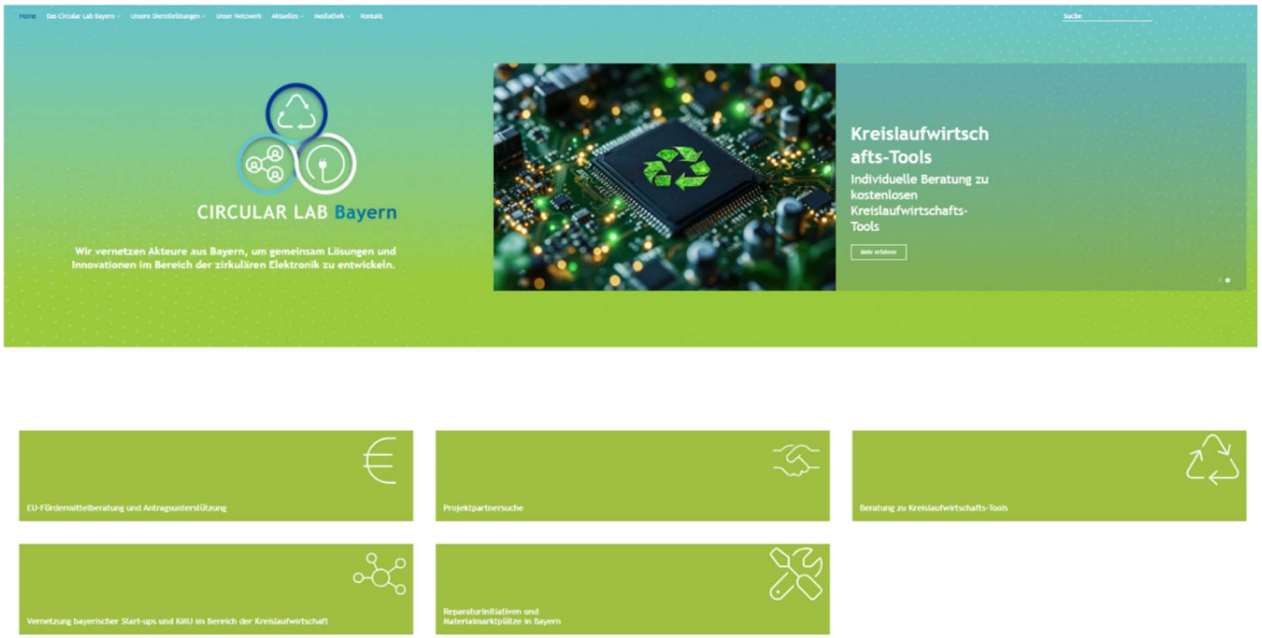


Physical lab structures established in Ljubljana (SI) by CCIS and in Košice (SK) by TUKE / ASDR

At the same time, many labs operated as hybrid structures combining physical infrastructure with digital tools, stakeholder networks, consultancy support, online communication, and regional outreach activities. This hybrid approach proved particularly effective for connecting diverse stakeholders and enabling continuous interaction beyond individual physical events.

Some partners also implemented network-based or virtual lab approaches integrated into existing organisational ecosystems, cluster structures, innovation support systems, or regional cooperation frameworks. In these cases, the lab function was less dependent on a dedicated physical space and more focused on facilitation, coordination, stakeholder mobilisation, and knowledge transfer activities.

Virtual lab structures established



Virtual lab structures established in Bavaria (DE) by BayFOR

The diversity of approaches demonstrated that successful circular labs do not require a single organisational model. Instead, the project showed that integrating circular lab functions into existing regional infrastructures and ecosystems can provide flexible, cost-efficient, and sustainable support structures adapted to different regional realities across Central Europe.

3. Establishment of the Regional Circular Labs

The establishment of the Regional Circular Labs was implemented progressively throughout the project and reflected the diversity of regional ecosystems, institutional capacities, and stakeholder environments across the participating countries. Building on the concepts developed in earlier project activities, partners established or adapted regional structures supporting circular economy approaches within the EEE sector. The labs combined stakeholder engagement, piloting support, knowledge transfer, awareness raising, and networking activities in order to facilitate practical circular transition processes.

Overview of the Regional Circular Labs within the Transnational Circular NET-LAB Network

Regional Circular Lab	Hosting Organisation	Main Focus	Type of Lab	Main Target Groups	Regional Ecosystem Involved
CircularER Lab	RER / ART-ER	Circular EEE ecosystems, policy support, stakeholder cooperation	Hybrid	SMEs, policymakers, innovation actors	Emilia-Romagna innovation ecosystem
CCIS Circular Lab	CCIS	Circular manufacturing, SME support, awareness raising	Physical + Hybrid	SMEs, BSOs, policymakers	Chamber ecosystem, clusters, circular economy stakeholders
TECOS Circular Lab	TECOS	Materials, manufacturing innovation, additive manufacturing	Hybrid	Manufacturing SMEs, researchers	Industrial and technology ecosystem
Košice Circular Lab	TUKE & ASRD	Circularity assessment, waste streams, innovation support, stakeholder engagement	Physical + Hybrid	SMEs, academia, innovation intermediaries, regional stakeholders	University, research and regional development ecosystem
t2i Circular Lab	t2i	Circular business models, SME support, awareness activities	Hybrid	SMEs, innovation actors	Regional innovation ecosystem
Biz-up Circular Lab	Biz-up	Circular business models and value chains	Network-based / Hybrid	SMEs, BSOs	Business support ecosystem

BayFOR Circular Lab	BayFOR	Circular innovation, stakeholder networking, EU cooperation	Network-based	Clusters, SMEs, research actors	Bavarian innovation ecosystem
Media Dizajn Lab	Media Dizajn	Design, communication, awareness raising	Virtual / Network-based	Creative sector, public, stakeholders	Design and communication ecosystem

The labs were established through different implementation approaches depending on regional needs and existing capacities. In several cases, partners embedded the lab concept into already existing infrastructures, innovation ecosystems, cluster initiatives, university laboratories, or business support environments, allowing rapid operationalisation and efficient use of existing resources. Other partners strengthened their activities through dedicated physical infrastructures, digital platforms, or stakeholder networks specifically developed within CIRCOTRONIC.

3.1. Main Implementation Approaches

The implementation of the Regional Circular Labs demonstrated a high degree of flexibility and regional adaptation. Rather than creating fully standardised structures, partners integrated the lab concept into their existing organisational ecosystems and infrastructures, allowing the labs to evolve according to local stakeholder needs, thematic priorities, and institutional capacities.

Different maturity levels and organisational models were observed across the partnership. Some labs operated through dedicated physical spaces and technical infrastructures, while others functioned primarily as coordination, networking, or stakeholder engagement platforms. This diversity proved to be one of the strengths of the Circular NET-LAB approach, enabling partners to test different operational models and identify flexible solutions suitable for varying regional contexts across Central Europe.

4. Performance and Real-Life Piloting of the Labs

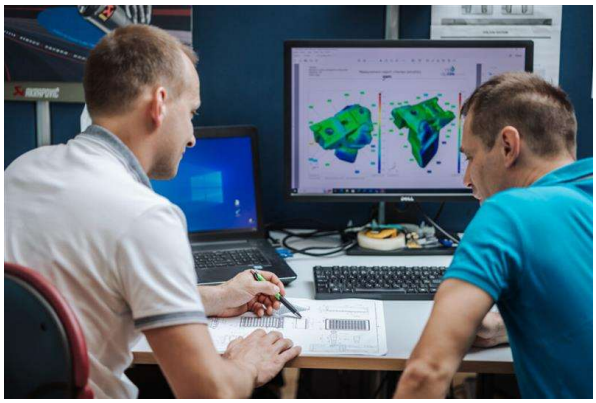
The Regional Circular Labs became operational environments supporting practical circular economy activities within the EEE sector. Throughout the project, the labs facilitated piloting activities, stakeholder cooperation, knowledge transfer, awareness raising, and regional ecosystem building under different organisational and regional conditions. The following sections analyse how the labs functioned in practice and how the Circular NET-LAB concept was tested in real-life environments.

4.1. Integration with Piloting

The Regional Circular Labs played an important operational role in supporting the piloting activities implemented under WP1. The labs provided practical environments where SMEs and stakeholders could test, discuss, and further develop circular economy approaches and tools related to circular design, materials and recovery, circular business models, legislative frameworks, sustainability strategies, and value chain cooperation.

The labs supported the piloting process through workshops, consultations, peer-learning activities, expert exchanges, matchmaking activities, and stakeholder meetings. In several regions, the labs acted as entry points for SMEs interested in circular transformation and facilitated direct interaction between companies, researchers, business support organisations, and circular economy experts. The labs also contributed to collecting feedback on the usability, applicability, and transferability of the tested tools and approaches under real-life conditions.

An important added value of the labs was their ability to support practical implementation processes beyond theoretical discussions. Through the combination of regional stakeholder networks, technical expertise, and facilitation capacities, the labs created supportive environments for experimentation, exchange of experiences, and gradual integration of circular economy principles into business and regional practices.



Piloting activities at TECOS (SI) and TUKE (SK)

4.2. Stakeholder Engagement and Ecosystem Building

The Regional Circular Labs actively contributed to stakeholder engagement and ecosystem building within the participating regions. Through workshops, conferences, exhibitions, awareness activities, consultations, networking meetings, and regional cooperation initiatives, the labs connected a broad range of quadruple helix actors relevant for circular transition in the EEE sector.

The stakeholder groups involved included SMEs, business support organisations, universities, research institutions, policymakers, clusters, NGOs, innovation intermediaries, students, and circular economy practitioners. The labs therefore functioned not only as technical or project-oriented structures, but also as regional cooperation platforms facilitating dialogue, knowledge exchange, and collaboration between actors that do not traditionally cooperate closely.

In several regions, the labs strengthened existing circular economy ecosystems and contributed to increasing awareness about circular manufacturing, repair and reuse approaches, WEEE management, sustainable product design, and circular value chains. The transnational character of the network additionally enabled exchange of practices and experiences between regions, increasing the visibility and accessibility of circular economy approaches across Central Europe.

4.3. Real-Life Testing of the Lab Concept

The implementation of the Regional Circular Labs provided valuable practical experience regarding the functioning of circular support structures under different regional and organisational conditions. One of the main findings of the piloting process was that successful circular labs do not depend on one standardised

organisational model, but rather on flexibility, stakeholder engagement, and integration into existing regional ecosystems.

The partnership tested different operational approaches, including physical labs, hybrid models, and network-based structures integrated into existing organisational infrastructures. The experience demonstrated that all these models can function effectively when supported by active facilitation, stakeholder cooperation, and practical implementation activities. In several cases, embedding the labs into already existing ecosystems, innovation infrastructures, cluster environments, or institutional structures increased operational efficiency, visibility, and long-term sustainability.

The piloting activities further confirmed that the role of the labs extends beyond providing physical infrastructure. The labs primarily functioned as facilitators of cooperation, knowledge transfer, stakeholder mobilisation, and practical experimentation. The combination of online and offline activities proved particularly effective for maintaining stakeholder interaction, supporting regional outreach, and enabling participation of different stakeholder groups.

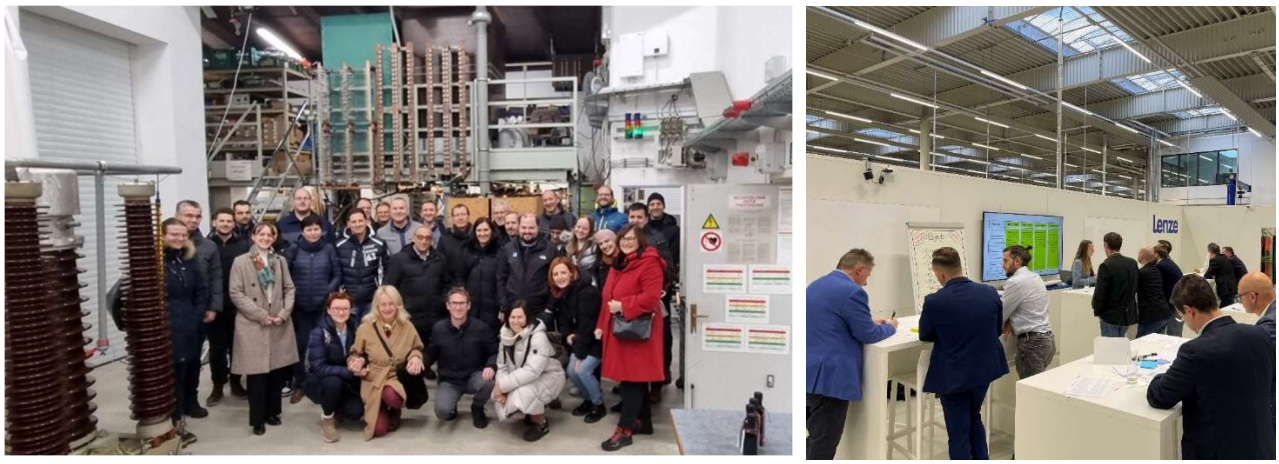
The real-life testing process therefore demonstrated that the Circular NET-LAB approach represents a flexible and transferable model that can be adapted to diverse regional contexts while still supporting common objectives related to circular transition in the EEE sector.

4.4. Examples of Practical Activities

During the project implementation, the Regional Circular Labs organised and supported a broad range of practical activities demonstrating their operational role within regional ecosystems. These activities included workshops, stakeholder consultations, exhibitions, conferences, awareness campaigns, networking meetings, study visits, piloting sessions, matchmaking activities, and support actions for SMEs.

The labs contributed to the organisation of regional and transnational workshops on circular economy topics, hosted piloting and stakeholder exchange activities, participated in conferences and exhibitions such as Ecomondo, and supported awareness raising through regional events, social media campaigns, and communication activities. Several labs also facilitated study visits and demonstrations within technical and innovation infrastructures, enabling practical exchange of experiences between stakeholders.

The diversity of implemented activities reflected the flexibility of the Circular NET-LAB concept and demonstrated the ability of the labs to adapt to different stakeholder needs, thematic priorities, and regional contexts. At the same time, the activities confirmed the strong potential of the labs to continue functioning as long-term support structures for circular economy cooperation, innovation, and knowledge transfer beyond the project duration.



Excursion in Slovenia and fair event in Linz (AT)

5. Transnational Circular NET-LAB Network

5.1. Establishment of the Network

Building on the establishment of the Regional Circular Labs, the partnership created the Transnational Circular NET-LAB Network as a cooperative framework connecting regional circular economy actors working in the EEE sector across Central Europe. The network was designed to strengthen transnational cooperation, facilitate knowledge exchange, support the transfer of circular economy approaches, and increase the long-term visibility and sustainability of project results.

The development of the network followed a structured process building upon earlier capacity-building, peer-learning, and concept development activities implemented within the project. The Circular NET-LAB connected regional labs established by the partners into a coordinated transnational structure combining regional expertise, infrastructures, stakeholder networks, and practical circular economy activities.

The network operated through a collaborative governance and cooperation structure involving universities, research institutions, chambers of commerce, clusters, business support organisations, regional development agencies, NGOs, and innovation actors. Common objectives, communication channels, collaboration mechanisms, and operational activities were jointly defined by the partnership. The network activities were supported through regular partner meetings, thematic exchanges, collaborative dissemination activities, and joint planning of future cooperation initiatives.

The overall objective of the Circular NET-LAB network was not only to connect existing regional activities, but also to create a long-term transnational ecosystem capable of supporting circular transition processes, promoting circular innovation, and facilitating cooperation between stakeholders active in the EEE sector and related value chains.

5.2. Cooperation and Knowledge Exchange

The Circular NET-LAB network created a structured framework for continuous cooperation and knowledge exchange between the participating regions and organisations. Through peer-learning activities, transnational workshops, joint dissemination actions, stakeholder meetings, and collaborative piloting activities, partners exchanged experiences, methodologies, tools, and practical approaches related to circular economy implementation in the EEE sector.

The network facilitated mutual learning between regions with different levels of experience, infrastructures, and ecosystem maturity. This diversity enabled partners to compare approaches, adapt successful practices to regional conditions, and jointly develop solutions addressing circular manufacturing, repair and reuse, WEEE management, circular business models, stakeholder engagement, and awareness raising.

An important aspect of the network was the transferability of methodologies and practical experiences generated through the regional labs and piloting activities. Partners exchanged information about stakeholder engagement methods, workshop formats, communication approaches, piloting experiences, and implementation challenges. The transnational cooperation therefore strengthened both the quality and the applicability of the project results across different regional contexts.

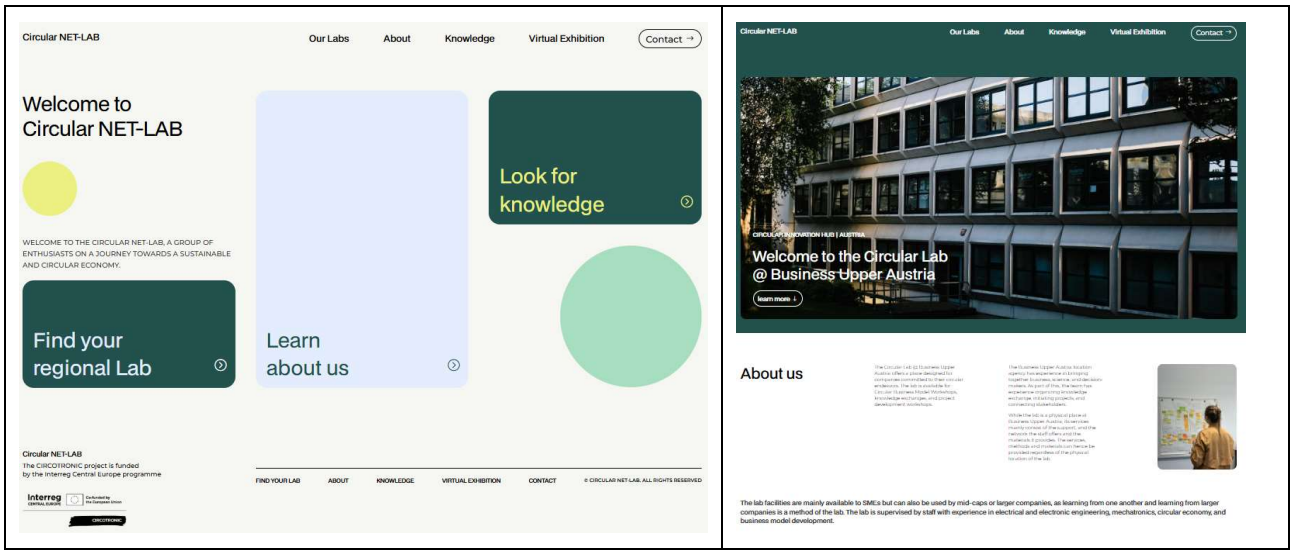
5.3. Digital Infrastructure Supporting the Network

The transnational network was further strengthened through a dedicated digital infrastructure established, consisting of the Circular NET-LAB web platform, a virtual exhibition, and a LinkedIn community. Together, these elements created a shared digital environment supporting communication, visibility, dissemination, stakeholder interaction, and long-term accessibility of project results.

The Circular NET-LAB web platform, serves as the central digital entry point to the network, presenting the regional labs, project activities, tools, methodologies, and stakeholder initiatives. The platform additionally supported long-term capitalisation of project outputs and provided visibility to the network beyond the official project website.

The virtual exhibition contributed an additional awareness-raising and communication dimension by presenting circular economy topics and project outputs in an accessible and visually engaging way. The LinkedIn community further strengthened professional networking and stakeholder interaction across regional and national boundaries.

The digital infrastructure achieved strong visibility and stakeholder engagement during the project implementation period. The platform recorded more than 900 active users, over 2,600 page views, and more than 7,500 interaction events between April 2025 and February 2026. Particularly high interest was recorded for the sections presenting the regional labs, confirming the relevance of the transnational network concept and stakeholder interest in practical circular economy initiatives and cooperation opportunities.



Examples from the Circular NET-LAB Platform

6. Key Results, Lessons Learned and Future Outlook

The implementation and piloting of the Regional Circular Labs and the Transnational Circular NET-LAB network demonstrated that the lab concept can function as an effective and flexible support structure for circular transition processes in the EEE sector. The labs successfully enabled the practical uptake and testing of project tools and methodologies, supported SME engagement, facilitated stakeholder cooperation, and strengthened regional circular economy ecosystems across the participating countries.

An important added value of the network was its ability to connect regional and transnational levels of cooperation. Through peer learning, transnational exchanges, joint dissemination activities, and

collaborative implementation processes, partners were able to share methodologies, experiences, and practical approaches while adapting them to different regional conditions and stakeholder needs. The network also increased the visibility, accessibility, and capitalisation potential of project results through its digital infrastructure, communication activities, exhibitions, conferences, and awareness-raising actions.

The piloting process demonstrated that flexible and regionally adapted implementation models are more effective than rigid standardised structures. While some labs operated through dedicated physical infrastructures, others functioned successfully through hybrid or network-based approaches integrated into existing regional ecosystems and organisational structures. The experience confirmed that physical infrastructure alone is not sufficient for successful operation; active facilitation, stakeholder engagement, regional integration, and cooperation capacities are equally important. The combination of online and offline activities further proved valuable for maintaining stakeholder interaction, dissemination, and long-term visibility.

The Circular NET-LAB network also created foundations for future cooperation beyond the project duration. Several partners plan to continue operating their regional circular lab activities within existing organisational structures, innovation ecosystems, and stakeholder networks. The Circular NET-LAB platform hosted by CCIS and the LinkedIn community maintained by Media Dizajn will continue supporting visibility, networking, and access to project results after project closure. The experiences, methodologies, and cooperation structures established through the network additionally provide a strong basis for future circular economy initiatives, regional cooperation activities, and potential follow-up projects in the field of circular EEE value chains and beyond.