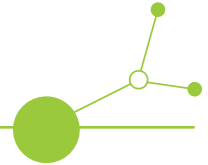


Circular design and development of sustainable products in 4 key sectors in Central Europe



Version 1
05 2026





Two stage pilot prototype creation, testing and business modeling

Deliverable 2.3.2

Content

<i>Public version notice</i>	3
1. Context.....	3
2. Overview of the regional 1 st stage workshops in 7 countries.....	4
2.1. Implementation and outcomes of 1st stage workshops per country	5
2.1.1. AUSTRIA (Biz-Up & CPU)	5
Workshop 1.....	5
Workshop 2.....	5
Workshop 3.....	5
Workshop 4.....	6
2.1.2. CROATIA (STEP RI & MJC)	7
Workshop.....	7
2.1.3. GERMANY (BI & UCB)	8
Workshop 1.....	8
Workshop 2.....	8
Workshop 3.....	8
Workshop 4.....	8
2.1.4. HUNGARY (PBKIK)	9
Workshop 1.....	9
Workshop 2.....	9
Workshop 3.....	9
Workshop 4.....	9
2.1.5. ITALY (ENVI & MESAP)	10
Workshop 1.....	10
Workshop 2.....	10
Workshop 3.....	10



Workshop 4.....	10
2.1.6. POLAND	11
Workshop 1.....	11
Workshop 2.....	11
2.1.7. SLOVAKIA (UEBA).....	12
Workshop 1.....	12
Workshop 2.....	12
Workshop 3.....	12
Workshop 4.....	12
2.2. Results of the regional design-thinking workshops.....	13
3. Implementation and outcomes of international 2 nd stage workshop across 7 countries	14
3.1. Overview per sector.....	14
3.1.1. CONSTRUCTION.....	15
3.1.2. MECHATRONIC	15
3.1.3. PACKAGING.....	15
3.1.4. PLASTIC	16
3.2. Results and outcomes.....	17
3.3. Developed business cases.....	17
4. Key results and achieved KPIs within 2 stage piloting workshops	18
4.1. Participation and KPI overview.....	19
4.2. Sector specific contributions	20
4.3. Development of business cases.....	20
4.4. Overall impact	21
4.5. Piloting sustainable product development - Output O2.1.....	21



Public version notice

This public version of Deliverable 2.3.2 has been edited for publication purposes. Personal data, attendance lists, signatures, photographs, contact information and other confidential information have been removed. The document retains the original methodology, activities, results, outcomes and KPI achievements of the CURIOST project.

1. Context

The piloting activity is implemented in two stages through regional and transnational design-thinking workshops focused on the development of sustainable and circular products.

In the first stage, regional workshops are organised involving 4-5 companies per country. Starting from the identification of key challenges, companies collaborate with a national pool of creative experts to co-develop sustainable and circular product solutions.

The second stage of piloting takes place at the transnational level. Companies present the drafts and ideas developed during the first stage and continue the co-development process together with the pool of creative experts (“creative heads”) in order to further refine and mature the solutions. The process results in minimum viable products (MVPs) concepts aligned with sustainability and circular economy principles. In parallel, business cases based on the developed MVPs are jointly created through collaboration among partners in different countries.

Throughout the entire process, the international pool of creative experts actively participates and provides continuous support in the development, testing, and further upgrading of the prototypes and MVPs.

These workshops included:

- Engagement of 29 most promising companies from 7 countries across 4 sectors
- Sector-specific group sessions and transnational exchanges aimed at improving and further developing MVPs
- Promotion of interregional cooperation and exchange of experiences
- Strengthening collaboration between companies, experts, and project partners in the development of sustainable and circular solutions

Developed business cases will serve for consolidation and creation of generalized business models for the targeted 4 sectors.

Based on the piloting results a generalized methodology will be developed as a solution for a sustainable and circular product development process.

This deliverable represents a key milestone in transforming collaborative ideas into concrete sustainable and circular product solutions. Through regional and transnational design-thinking workshops, SMEs and project partners jointly moved from identifying challenges to developing and refining innovative prototypes and MVPs, strengthening cross-border cooperation, knowledge exchange, and practical implementation of circular economy principles.



2. Overview of the regional 1st stage workshops in 7 countries

An overview of the national 1st stage workshops, scheduled between February and April 2026 across all seven partner countries, demonstrates the engagement of 29 SMEs and small mid-caps in the development and testing of ideas based on the design-thinking methodology for sustainable product development and design.

Partners independently determined the format and organisation of the workshops by selecting one of the following two options:

Option 1: One onsite workshop involving all selected companies and external experts, complemented by company-specific follow-up support after the workshop.

Option 2: Organisation of individual workshops for each company, held either at the company’s premises or at the project partner’s premises, combined with tailored support and collaboration with external experts.

In total, 18 workshops have been implemented by the CURIOST consortium.

Country	Project partner(s)	Date(s) of workshop implementation	Number of participating companies in the regional workshops
Austria	Biz-Up, CPU	11.&25.2.2026. 20.&27.4.2026.	4
Slovakia	UEBA	23.2.&30.2.2026. 24.2.&31.3.2026. 25.2.& 01.4.2026. 26.2.& 02.4.2026.	4
Hungary	PBKIK	12., 20., 26., 30.3.2026.	4
Poland	SPC	12.3.2026. 09.4.2026.	5
Croatia	STEP RI, MJC	24.2.2026.	4
Italy	MESAP, ENVI	04. & 13.2.2026.	4
Germany	BI, UCB	04., 10. & 25.2.2026. 14.4.2026.	4
Total number of companies participating in the on-site regional workshops			29



2.1. Implementation and outcomes of 1st stage workshops per country

The following chapters provide an overview, key information and summaries of all workshops implemented by the project partners during the 1st stage of the piloting activities.

The 1st stage workshops were implemented from February to April as onsite events in the partner countries. A total of 29 companies from the four targeted sectors participated at the national level. During the workshops, companies identified their key challenges and development needs, while initial ideas for innovative and sustainable solutions (MVPs) were drafted and further elaborated in cooperation with national external experts.

2.1.1. AUSTRIA (Biz-Up & CPU)

The following subsection presents descriptions and summaries of the workshops conducted in Austria within the framework of the 1st stage activities.

Austria organised a total of four individual workshops, one for each company, held either at the companies' premises or at the project partner's premises, and complemented by support and collaboration with external experts.

Workshop 1

Sector: Mechanics & Mechatronics

The workshop focused on the development of sustainable solutions for improving air quality in workplace environments. Using a design-thinking approach, participants explored current challenges, user needs, and opportunities for sustainable product and service innovation. Particular attention was given to defining next development steps, including stakeholder feedback, goal setting, requirements definition, and sustainability materiality assessment.

Workshop 2

Sector: Packaging

The workshop was conducted in two sessions. The first focused on product circularity and alternative material options, while the second addressed the development of an innovative service-based packaging business model. Discussions also covered potential implementation challenges and market adoption barriers, particularly within the logistics sector.

Workshop 3

Sector: Mechanics & Mechatronics

The workshop addressed the development of AI-supported control software for manufacturing processes, aiming to improve product quality and consistency. Key development directions were discussed and refined based on industry requirements and customer needs to ensure practical applicability.



Workshop 4

Sector: Plastics

The workshop focused on the sustainable development of multilayer film products. Participants explored approaches for designing material structures that facilitate the effective reuse of recycled materials while maintaining technical performance and economic feasibility, supporting circular economy objectives



2.1.2. CROATIA (STEP RI & MJC)

The following subsection presents descriptions and summaries of the workshop conducted in Croatia within the framework of the 1st stage activities.

Croatia organised one joint workshop in which all selected companies participated together, complemented by support and collaboration with creative experts matched to each company based on their specific areas of expertise. Workshop was held at the project partner's premises.

Workshop

Sectors involved: Packaging, Mechanics & Mechatronics, Construction

The workshop brought together companies from 3 different sectors to identify specific business and sustainability challenges as a foundation for innovation. Through the application of the Design Thinking methodology, participants critically evaluated their existing processes and products to explore sustainable improvement opportunities.

Supported by expert facilitators and sector specialists, the companies were guided in defining strategic development pathways for their first sustainable prototypes and Minimum Viable Products (MVPs). The workshop encouraged cross-sector collaboration, creative problem-solving, and the integration of sustainability principles into future product and service development.



2.1.3. GERMANY (BI & UCB)

The following subsection presents descriptions and summaries of the workshops conducted in Germany within the framework of the 1st stage activities.

Germany organised a total of four individual workshops, one for each company, held either at the companies' premises or at the project partner's premises, and complemented by support and collaboration with external experts.

Workshop 1

Sector: Plastics

The workshop focused on sustainability management and circular economy principles, combining expert input with interactive ideation sessions. Participants explored opportunities for circular product and service innovation, generating and refining concepts through collaborative exercises. One of the key outcomes was the development of a circular solution aimed at improving the collection and reuse of material residues generated during product installation and use.

Workshop 2

Sector: Construction

The workshop applied design thinking and business model innovation tools to identify opportunities for circular economy solutions within the construction sector. Participants developed customer personas, defined value propositions, and generated a range of ideas that were subsequently evaluated and refined. Selected concepts were further developed into sustainable business model proposals with a focus on long-term value creation and circular practices.

Workshop 3

Sector: Mechanics & Mechatronics

The workshop focused on the development of a circular business model based on collaboration between complementary industry actors. Participants analysed existing business models, identified relevant competencies, and explored opportunities to integrate circular economy principles into a new market offering. The resulting concept combined product recovery, refurbishment, and digital marketplace functionalities to extend product lifecycles and increase resource efficiency.

Workshop 4

Sector: Mechanics & Mechatronics

The workshop explored circular business model opportunities related to the recovery, refurbishment, remanufacturing, and resale of industrial equipment. Participants assessed the current business model, examined circular economy strategies, and developed a future-oriented circular business model framework. The session resulted in the identification of key development priorities and implementation pathways to support more sustainable value creation.



2.1.4. HUNGARY (PBKIK)

The following subsection presents descriptions and summaries of the workshops conducted in Hungary within the framework of the 1st stage activities.

PBKIK organised a total of four individual workshops, one for each company, held at the companies' premises, and complemented by support and collaboration with external experts.

Workshop 1

Sector: Mechanics & Mechatronics

The workshop explored circular design opportunities for highly specialized industrial products. Participants assessed options related to material substitution, modular design, repairability, and resource efficiency. While several promising development directions were identified, implementation was postponed due to resource and capacity constraints. The workshop nevertheless provided a valuable foundation for future sustainability initiatives.

Workshop 2

Sector: Mechanics & Mechatronics

The workshop focused on developing a sustainable product concept alongside broader operational sustainability improvements. Key topics included energy efficiency, digitalization, water management, workplace wellbeing, and waste reduction. Follow-up activities helped identify practical sustainability measures and establish a roadmap for future implementation.

Workshop 3

Sector: Mechanics & Mechatronics

The workshop addressed water-saving and water-recycling solutions in response to growing sustainability and ESG requirements. Participants developed a concept for a technological platform based on operational experience and pilot projects, focusing on water efficiency, energy savings, and carbon footprint reduction.

Workshop 4

Sector: Building & Construction

The workshop explored the use of digital surveying technologies and their potential integration into future construction services. Discussions highlighted benefits such as improved accuracy, reduced material waste, lower environmental impacts, and enhanced project efficiency. The workshop also examined future opportunities related to Building Information Modeling (BIM) and digital construction practices.



2.1.5. ITALY (ENVI & MESAP)

The following subsection presents descriptions and summaries of the workshops conducted in Italy within the framework of the 1st stage activities.

Italy organised a total of four individual workshops, one for each company, held either at the companies' premises or and at the project partner's premises, and complemented by support and collaboration with external experts.

Workshop 1

Sector: Mechatronics

The workshop combined online and on-site activities to assess circular innovation opportunities. Participants analysed products, materials, and production processes, identified key technical challenges, and explored potential development pathways through expert-led discussions and laboratory assessments.

Workshop 2

Sector: Mechatronics

The workshop focused on evaluating circular economy opportunities and innovation needs. Through online and in-person sessions, participants reviewed current products and processes, identified technical and regulatory challenges, and defined potential areas for future sustainable development.

Workshop 3

Sector: Plastics

The workshop examined opportunities for circular innovation in plastics manufacturing. Activities included process and material assessments, site visits, and expert discussions aimed at identifying sustainable development options and validating future innovation pathways.

Workshop 4

Sector: Plastics

The workshop supported the development of a new product incorporating recycled materials. Participants explored environmental certification requirements, life cycle assessment (LCA) options, and product durability testing. The outcome was a roadmap for product validation and market readiness, with a focus on sustainability and regulatory compliance.



2.1.6. POLAND

The following subsection presents detailed descriptions and summaries of the workshops conducted in Poland within the framework of the 1st stage activities.

Poland organised a total of two individual workshops, held at the project partner's premises, and complemented by support and collaboration with external experts.

Three companies participated in the first workshop and two companies participated in the second workshop.

Workshop 1

Sectors: Construction and Plastics

The workshop introduced circular economy principles and innovation tools, including Design Thinking and Lean Canvas. Participating companies worked with experts to develop sustainable business concepts, identify innovation opportunities, and create initial business models for future MVP development and circular transformation.

Workshop 2

Sectors: Construction and Plastics

The workshop focused on developing innovative and sustainable product concepts through the application of circular economy approaches and Lean Canvas methodology. Participants refined business models, explored circular opportunities, and received guidance on future development pathways, collaboration opportunities, and potential funding sources.



2.1.7. SLOVAKIA (UEBA)

The following subsection presents detailed descriptions and summaries of the workshops conducted in Slovakia within the framework of the 1st stage activities.

UEBA organised a total of four individual workshops, one for each company, with each workshop consisting of two sessions held at the project partner premises, and complemented by support and collaboration with external experts.

Workshop 1

Sector: Packaging

The workshop focused on applying design thinking and circular economy principles to identify sustainability challenges and innovation opportunities. Participants explored circular business models, assessed barriers to green transition, and developed initial concepts for future pilot activities.

Workshop 2

Sector: Plastics

The workshop supported the identification of sustainability challenges and circular innovation opportunities within the plastics sector. Through mentoring and concept development activities, participants explored new business models, technologies, and collaboration approaches to support the green transition.

Workshop 3

Sector: Packaging

The workshop addressed circular economy opportunities in the packaging sector. Participants analysed current business challenges, explored innovative solutions and business models, and developed concepts aimed at improving sustainability and competitiveness.

Workshop 4

Sector: Packaging

The workshop focused on developing circular and sustainable business solutions for the packaging sector. Activities included assessing green transition challenges, evaluating innovative technologies and business models, and refining concepts for further piloting and implementation.



2.2. Results of the regional design-thinking workshops

The regional design-thinking workshops were successfully implemented in all partner countries, with overall highly positive feedback from participating companies and stakeholders.

During the workshops, the participating companies, together with the national creative experts, developed initial solution concepts and first MVP-oriented ideas for sustainable and circular products addressing the identified human-centric challenges.

The main objective of the activity was largely achieved, with a total of 29 selected companies from the participating countries successfully involved in the piloting phase. While the initial target was to engage 30 companies, one partner was ultimately unable to organize the final planned workshop and recruit the remaining participant despite continuous efforts throughout the implementation period. In the upcoming second stage of the pilot activities, the participating companies will present their developed ideas and MVP concepts to an international pool of creative experts and fellow companies, fostering transnational cooperation, knowledge exchange, networking opportunities, and potential future collaborations.



3. Implementation and outcomes of international 2nd stage workshop across 7 countries

The 2nd stage workshops were successfully implemented in an online format (ZOOM) on 22nd and 23rd April, with one dedicated workshop organised for each of the four targeted sectors: Construction, Mechatronics, Packaging, and Plastics.

The workshops brought together participating companies, external experts, and project partners in a transnational collaborative environment aimed at further developing the concepts and MVP ideas initiated during the 1st stage workshops. Through presentations, discussions, and expert feedback sessions, companies had the opportunity to refine their proposed solutions and exchange experiences with stakeholders from different partner countries

Participation overview per sector:

CONSTRUCTION	MECHATRONIC	PACKAGING	PLASTIC
5 companies	10 companies	6 companies	8 companies
5 external experts	9 external experts	3 external experts	7 external experts
Total of 32 participants	Total of 34 participants	Total of 27 participants	Total of 34 participants

3.1. Overview per sector

The following subsections present detailed descriptions and summaries of the 2nd stage workshops conducted online within the four targeted sectors.

A total of four individual workshops were successfully implemented, with one dedicated workshop organised for each sector. The workshops were conducted in an online format and were complemented by continuous support, mentoring, and collaboration between participating companies, external experts and project partners.

The activities focused on the presentation and further development of innovative and sustainable product ideas and MVP concepts initiated during the 1st stage workshops. Through transnational exchange, expert feedback, and collaborative discussions, the workshops enabled companies to refine their business cases, strengthen international networking, and explore future cooperation opportunities across sectors and partner countries.



3.1.1. CONSTRUCTION

The online workshop for the building and construction sector focused on the presentation and discussion of innovative circular economy solutions and sustainable product concepts developed by participating companies. The presented ideas addressed topics such as recycling of construction waste, sustainable building materials, digital solutions for renovation and reuse of buildings, and resource-efficient construction processes.

During the workshop, participants received valuable feedback and recommendations from the international pool of external experts, particularly regarding sustainability aspects, market potential, certification requirements, scalability, and long-term circularity impacts. The discussions encouraged further refinement of the proposed MVP concepts and highlighted the importance of innovation, digitalisation, and cross-sector collaboration in supporting the transition towards a circular construction industry.

The workshop also strengthened transnational networking and opened opportunities for future cooperation, knowledge exchange, and potential joint development activities among participating stakeholders.

3.1.2. MECHATRONIC

The online workshop for the mechatronics sector focused on the presentation and further development of innovative and sustainable business concepts addressing circular economy challenges in manufacturing, electronics, machinery, and industrial processes. The presented solutions covered topics such as AI-supported optimisation, refurbishment and reuse of electronic components, sustainable machinery operations, water treatment technologies, reverse logistics models, and service-based circular business approaches.

Throughout the workshop, participating companies received valuable feedback from the international pool of external experts regarding technical feasibility, scalability, sustainability impact, quality assurance, and implementation strategies. Particular emphasis was placed on the integration of circular economy principles into business models and on identifying economically viable approaches to sustainable innovation.

The workshop fostered transnational knowledge exchange, networking, and collaboration opportunities among participants, while supporting companies in refining their MVP concepts and strengthening the development of sustainable and circular solutions within the mechatronics sector.

3.1.3. PACKAGING

The online workshop for the packaging sector focused on the presentation and further development of innovative and sustainable packaging solutions aligned with circular economy principles. The presented concepts addressed topics such as eco-friendly packaging materials, reusable packaging systems, automation of packaging processes, sustainable logistics solutions, and reduction of single-use packaging waste.



During the workshop, participating companies received valuable feedback and recommendations from the international pool of external experts regarding sustainability performance, life cycle assessment, customer acceptance, regulatory considerations, market positioning, and implementation strategies. Particular attention was given to the importance of balancing environmental impact, functionality, and economic feasibility within packaging innovation processes.

The workshop supported the refinement of MVP concepts and business cases while fostering transnational exchange, networking, and future collaboration opportunities among participating stakeholders.

3.1.4. PLASTIC

The online workshop for the plastics sector focused on the presentation and further development of circular economy solutions and sustainable innovations within plastic manufacturing and processing industries. The presented concepts addressed topics such as material upcycling, recycling and reuse of production waste, circular production systems, sustainable logistics, product take-back schemes, and development of recycled-material applications.

During the workshop, participating companies received valuable feedback and recommendations from the international pool of external experts regarding technical feasibility, certification requirements, material quality, scalability, market positioning, and commercialization potential. Special attention was given to ensuring product quality, repeatability of recycling processes, and the integration of circular economy principles into long-term business models.

The workshop contributed to the refinement of MVP concepts and business cases while fostering transnational exchange, networking, and future collaboration opportunities among participating companies, experts, and project partners.



3.2. Results and outcomes

During the workshops, participating companies presented their developed ideas, concepts, and initial MVP solutions to the international panel of external experts and other participating enterprises. The sessions enabled valuable peer-to-peer learning, expert mentoring, and constructive feedback exchange.

The workshops resulted in:

- further elaboration and validation of business ideas and MVP concepts;
- valuable input and recommendations gathered from the international panel of external experts;
- establishment of cross-national contacts, networking opportunities, and potential future collaborations between companies and experts;
- development and refinement of business cases for each participating company.

Overall, the 2nd stage workshops significantly strengthened the transnational dimension of the piloting activities and supported companies in advancing innovative and sustainable product development concepts.

3.3. Developed business cases

Following the implementation of the piloting workshops, business cases were further developed for each participating company in close cooperation with project partners and the involved creative experts.

The business cases were prepared based on the challenges, ideas, and MVP concepts identified and refined during the 1st and 2nd stage workshop activities. Through collaborative work, participating companies received expert support in further elaborating their innovative and sustainable product or service concepts, including aspects related to circular economy principles, market potential, implementation feasibility, and future development opportunities.

The finalized business cases were developed for all participating companies. Due to confidentiality considerations, detailed business case documentation is not included in the public version of this deliverable.



4. Key results and achieved KPIs within 2 stage piloting workshops

The implementation of the two-stage piloting workshops successfully contributed to the achievement of the project objectives related to sustainable product development, circular economy innovation, and transnational cooperation between SMEs, creative experts, and project partners.

The piloting activities were implemented within Output O2.1 - *Piloting sustainable product development approach* and followed an adapted design thinking methodology specifically tailored to innovative and sustainable product development within the four targeted sectors: Construction, mechatronics, packaging and plastics

Following the completion of the regional 1st stage workshops, the 2nd stage activities focused on the further development, validation, testing, and refinement of innovative ideas, prototype concepts, MVPs, and related business cases through a transnational collaborative approach.

The piloting process combined regional and international dimensions:

- the 1st stage workshops were organised at regional level and focused on identifying company-specific challenges, sustainability needs, and opportunities for circular innovation, while supporting the development of first prototype drafts;
- the 2nd stage workshops were implemented at transnational level and enabled companies to present, test, refine, and further upgrade their prototype concepts into more mature sustainable and circular MVPs with the support of international creative experts and project partners.

The workshops provided participating companies with expert guidance, mentoring, testing opportunities, and peer-learning experiences while strengthening networking and cooperation across partner countries and sectors.

A total of four online transnational workshops were successfully implemented on 22 and 23 April, with one dedicated workshop organised for each targeted sector:

- Construction
- Mechatronics
- Packaging
- Plastics

The workshops brought together participating companies, external experts acting as external experts, and project partners in a collaborative environment aimed at supporting the transition towards sustainable, innovative, and circular business models.



4.1. Participation and KPI overview

The piloting activities successfully reached and engaged a number of stakeholders across all participating sectors.

Sector	Participating companies	Creative Heads	Total participants
Construction	5	5	32
Mechatronics	10	9	34
Packaging	6	3	27
Plastics	8	7	34
Total	29 companies	24 External experts	127 participants

The achieved KPIs demonstrate strong engagement of SMEs and experts throughout the piloting process, as well as successful implementation of transnational collaboration and knowledge exchange activities.

Key activities implemented

The following key activities were successfully carried out during the piloting process:

- selection and engagement of highly motivated SMEs with strong innovation potential and interest in sustainable product development
- organisation and implementation of regional 1st stage workshops based on an adapted design thinking methodology
- development of first prototype/MVP drafts for sustainable and circular products and services
- organisation and implementation of transnational 2nd stage workshops focused on testing, refinement, and validation of ideas and MVP concepts
- continuous mentoring and support provided by the international pool of external experts and project partners
- collaborative development and improvement of MVP concepts and business cases
- facilitation of cross-sectoral and cross-national networking, cooperation, and knowledge exchange.



4.2. Sector specific contributions

Each targeted sector addressed specific sustainability and circular economy challenges through the development of tailored MVP concepts and innovative business solutions.

Construction Sector

The construction workshops focused on sustainable building materials, recycling of construction waste, digital renovation solutions, reuse of buildings, and resource-efficient construction processes. The activities supported companies in exploring circular construction approaches and environmentally responsible building practices.

Mechatronics Sector

The mechatronics workshops addressed sustainable manufacturing, AI-supported optimisation, refurbishment and reuse of electronic components, sustainable machinery operations, water treatment technologies, reverse logistics models, and service-based circular business approaches. Particular emphasis was placed on technological innovation, sustainability impact, and implementation feasibility.

Packaging Sector

The packaging workshops focused on eco-friendly packaging materials, reusable packaging systems, sustainable logistics solutions, packaging automation processes, and reduction of single-use packaging waste. Discussions highlighted the importance of balancing sustainability performance, functionality, customer acceptance, and economic feasibility.

Plastics Sector

The plastics workshops concentrated on recycling and reuse of production waste, material upcycling, circular production systems, sustainable logistics, take-back schemes, and development of recycled-material applications. Special attention was given to product quality, repeatability of recycling processes, scalability, and commercialization potential.

4.3. Development of business cases

As a final outcome of the piloting activities, business cases were developed and refined for participating companies in cooperation with project partners and creative experts.

The business cases were based on the challenges, concepts, prototype drafts, and MVP solutions identified and refined during both stages of the workshops and included considerations related to:

- circular economy integration
- sustainability performance
- technical and implementation feasibility
- market potential and competitiveness
- scalability and commercialization opportunities
- long-term development perspectives.



The finalized business cases constitute an important deliverable output and provide participating SMEs with structured guidance for the further development and implementation of their innovative and sustainable solutions.

4.4. Overall impact

The implementation of the two-stage piloting workshops significantly strengthened the transnational dimension of the project and contributed to the development of innovative, sustainable, and circular product concepts across all targeted sectors.

The achieved KPIs and results confirm the successful engagement of SMEs, creative experts, and project partners in collaborative innovation processes and demonstrate the project's contribution to supporting green transition, sustainable product development, circular economy implementation, and international cooperation within the participating regions.

4.5. Piloting sustainable product development - Output O2.1

Output O2.1 successfully concluded a two-stage piloting process focused on innovative, sustainable, and circular product development.

The piloting methodology was based on an adapted design thinking approach jointly developed and modified by project partners in order to address the specific needs of SMEs operating within the targeted sectors. It enabled participating companies to develop innovative solutions through iterative cycles of ideation, prototype creation, testing, validation, and improvement.

The process combined regional and transnational dimensions:

- the 1st stage workshops were implemented at regional level and focused on identifying company challenges, generating ideas, and developing first prototype concepts;
- the 2nd stage workshops introduced a transnational collaboration component, enabling companies to present, test, and further refine their prototype concepts with the support of international creative experts and project partners.

Through this approach, participating SMEs received structured support in transforming initial ideas into more mature sustainable business concepts with clear market potential and circular economy relevance.

Achieved results and outcomes

The piloting workshops resulted in several important outcomes contributing to the project objectives and the green transition of participating SMEs.

Key achieved results include:

- further elaboration, validation, testing, and refinement of innovative business ideas and MVP concepts
- development of first prototype drafts and their upgrade into sustainable and circular MVPs
- integration of circular economy principles into product and service development processes



- strengthened understanding of sustainability, scalability, implementation feasibility, and market potential
- expert recommendations, mentoring, and continuous support provided by the international pool of external experts
- development and improvement of business cases for participating companies
- enhanced transnational cooperation and networking between SMEs, experts, and project partners
- identification of future collaboration opportunities and potential joint initiatives
- increased awareness and capacities regarding sustainable innovation approaches and circular business models.

The workshops also contributed to strengthening participants capacities in areas such as sustainable product development, digitalisation, resource efficiency, circular production systems, eco-design, sustainable logistics, and implementation of innovative business models.