

RE-INCITE

Output 1.1 Pilot specific strategy is defined for the 4 pilots – the strategic circular value chain report



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RE-INCITE project

Clusters enable municipalities to collaboratively build circular economy value chains

The RE-INCITE project addresses one of the Alpine Space's most pressing challenges: the practical implementation of circular economy (CE) strategies. While many Alpine regions have developed CE strategies, they often remain at the policy level, with limited success in creating concrete value chains. Industrial companies tend to perceive their waste streams as sufficiently managed and secondary materials (SMs) as more costly than virgin raw materials, which discourages uptake. At the same time, municipalities lack the expert knowledge and tools to drive circular solutions and connect effectively with businesses.

Objectives and Approach

RE-INCITE aims to strengthen institutional capacities of municipalities and clusters to implement circular economy strategies by:

- **Developing resilient circular supply chains** in four pilot municipalities through place-based strategies tailored to local needs.
- **Transforming residuals into secondary materials** by matching supply and demand across industries.
- **Strengthening multi-level governance structures** by aligning local, regional, and macro-regional strategies (with direct links to EUSALP and the EU Green Deal).
- **Facilitating cross-sectoral collaboration** between clusters, municipalities, and businesses to enable new business models.
- **Providing policy recommendations and a “White Book”** for municipalities across the Alpine Space to ensure long-lasting transferability.

The project introduces an innovative place-based methodology, the **Value Chain Generator (VCG)**, to identify residual streams and new circular materials. By leveraging cluster expertise and municipal governance, RE-INCITE builds a nucleus for cross-border cooperation. Four pilot actions will generate concrete strategies, roadmaps, and business plans that municipalities can adopt and replicate.

Expected Results

- 4 pilot strategies implemented with measurable environmental, social, and economic impacts.
- Networking and knowledge transfer involving **10 municipalities and clusters** across the Alpine Space.
- At least **6 organisations with improved institutional capacities** through cooperation activities.
- Concrete policy recommendations submitted to **EUSALP authorities** to align governance for circular economy.
- A transferable **White Book for municipalities** to guide future CE initiatives.

Transnational Value

The Alpine Space's fragmented economies and administrations cannot tackle circular economy implementation in isolation. RE-INCITE ensures knowledge exchange and joint solutions across borders, with Stuttgart, Heilbronn, Basel, Ljubljana, and others serving as role models. By combining



expertise from five partners—**Wirtschaftsförderung Raum Heilbronn (Lead Partner)**, **Anteja (SI)**, **COMET (IT)**, **Biz-Up (AT)**, and **WRS Stuttgart (DE)**—the project creates synergies that single regions could not achieve alone.

Impact and Long-term Vision RE-INCITE contributes directly to the **European Green Deal**, the **Territorial Agenda 2030**, and the **EU Strategy for the Alpine Region (EUSALP)** by reducing resource dependency, lowering CO₂ emissions, and fostering sustainable regional development. The long-term ambition is to scale successful models across the Alpine Space and beyond, ensuring that municipalities can continue building resilient, circular value chains after the project ends.

Introduction and methodology to the value chain generator

The Value chain generator utilizes the cutting edge BioLink® algorithm to define technologically sound and commercially viable circular value chains and business models for the regions and clusters.

Value Chain Generator (VCG) A Pathway to Circularity and Profitability

VCG leverages AI and big data Biolink® model, to repurpose industrial residuals into valuable resources and products. VCG not only enhances the profitability of companies in the region, but also aligns with climate targets by fostering a transition towards a circular economy.

Creating High-Demand Products from Waste

By matching companies based on their resource needs and residuals, VCG facilitates the creation of in-demand market products. It offers technical solutions and fosters business partnerships that reduce waste treatment costs, generate new revenue streams, and improve overall profitability. Simultaneously, it contributes to the reduction of CO₂ emissions and the conservation of land and freshwater resources.

Circular Value Chain Report- Regional Opportunities Analysis

The circular value chain report provides a framework for the transformation of municipal waste streams and byproducts from multiple industries into high-value products. It offers an overview of circular value chains for each partner municipality. Circular pathways are targeted towards market segments that exhibit both established demand and favourable value creation, including pharmaceutical-grade materials, specialty chemicals, and sustainable construction products. Each pathway leverages technologies available through European providers. The report is intended to assist the project partners in the definition of pilots and the formulation of pilot strategies.

From the partner dataset, the Value Chain Generator shortlisted value chains. Leveraging partners' knowledge of and access to companies, the consortium down-selected and scoped pilots for further exploration.



STRATEGIC CIRCULAR PATHWAYS: Upper Austria

A dataset of 1,188 companies was analyzed and five key pathways emerged as actionable based on technology, available feedstock, and market demand. Table below summarizes five circular value chains.

Table: Circular value chains Upper Austria

Feedstock Source	Output Product	Processing Technology	Market application
Dairy operations	Protein Ingredients	Membrane separation & fractionation	High-protein nutrition, pharmaceuticals
Bread production	Lactic Acid	Fermentation & enzymatic hydrolysis	Food, pharma, bioplastics
Landscape services / wood residuals	Biochar	Pyrolysis systems	Green cement/construction, agriculture
Brewing Industry	Alternative Proteins	Biofractionation processing	Feed, alternative proteins
Metal Processing	Metal Briquettes	Metallurgical recovery	Metalworking industry reuse

DAIRY WHEY CIRUCLAR VALUE CHAIN

Dairy → Whey → Proteins → Nutrition, pharma

Market Opportunity: Regional dairies incur disposal costs for whey. Converting it into high-value proteins and pharmaceutical-grade lactose turns a cost center into a margin engine. The circular value chain secures supply from 25 identified dairy operations and applies proven, modular membrane-separation technology to convert whey into premium feedstock for high-value products.

Technology: Modular membrane separation units enable scalable protein and lactose fractionation with established European technology providers offering proven solutions. Industrial track record in dairy applications ensures low technology risk and immediate pilot readiness.

Next Step – implementation framework: Project partner can engage large-scale dairy producers to assess current whey management practices and explore future options to secure long-term supply contracts. Capital intensity can be reduced through co-investment with dairy partners and vendor financing from equipment providers. Project partner can lock in market access via framework offtake agreements with Austrian buyers of lactose and protein ingredients.



BREAD WASTE CIRCULAR VALUE CHAIN

Bread production → Bread Waste → Lactic Acid → pharma, food, PLA

Market Opportunity: Food, pharmaceutical, and polylactic acid production markets offer premium pricing for lactic acid derived from sustainable feedstocks. The 57 identified bread manufacturers in the region provide waste streams for conversion to high-value chemical products with applications spanning pharmaceuticals, cosmetics, and bioplastics.

Technology: Fermentation and enzymatic hydrolysis technologies from established providers including technology providers in Austria enable efficient carbohydrate conversion. There is no processors current in the Upper Austria though it is an option for co-investment with technology providers.

Next Step – implementation framework: Project partner can convene the regional bread cluster, secure long-term supply contracts for residuals, and co-invest with proven technology providers to deploy processing capacity. Parallel actions: pilot lactic-acid offtake in Austria and initiate supply agreements with large bakeries to ensure reliable collection and productive use.

This initiative engages project partners—including Basel—to co-design pilots that establish local PLA production in the Alpine Space, aligning waste feedstocks, siting, and offtake to create a replicable circular value-chain model.

WOOD RESIDUES CIRCULAR VALUE CHAIN

Wood Residues → Biochar - Green cement

Market Opportunity. Construction sector demand for low-carbon materials drives premium pricing for biochar in multiple high-value markets. The 100+ landscape service providers generate biomass supply for dual revenue model combining material sales with carbon dioxide removal (CDR) credits.

Technology: Pyrolysis technology from proven European providers offers commercial-scale deployment with operational references. Feedstock flexibility and established output specifications enable immediate regional implementation.

Implementation Framework: Long-term access to wood residuals can be secure via agreements with landscape service providers. Modular pyrolysis systems enabling regional deployment and capacity scaling. Construction sector partnerships and EU CDR credit mechanism integration

This circular value-chain initiative engages municipal services and offers Heilbronn and Pordenone a joint pathway to co-design pilots and actions, positioning both municipalities as early adopters of scalable negative-emission solutions.



STRATEGIC CIRCULAR PATHWAYS: Pordenone

The Pordenone region analysis examined 1,545 companies, focusing on agricultural residues, industrial waste streams, and existing manufacturing capabilities. Table below summarizes five circular value chains.

Table: Circular value chains Pordenone

Feedstock Source	Output Product	Processing Technology	Market Applications
Grape Cultivation Residues	Bio-Oil	Fast-pyrolysis	Renewable fuels, bio-chemicals, heating
Bread Manufacturers	Lactic Acid	Fermentation & enzymatic hydrolysis	Food, pharma, bioplastics-PLA
Landscape Services	Biochar	Pyrolysis	Green cement/construction, agriculture
Winery Operations	Polyphenols	Microwave-assisted extraction	Nutraceuticals, cosmetics, antioxidants
Metal Processing	Metal Briquettes	Metallurgical recovery & briquetting	Metalworking reuse

GRAPE RESIDUES VALUE CHAIN

Grape cultivation → Wood residues → Fast-pyrolisis Bio-oil (FPBO) → Fuel

Market Opportunity. Market opportunity: convert low-value vineyard prunings into fast-pyrolysis bio-oil, aligning with circular bioeconomy targets and creating new revenue for farmers and cooperatives. Premium positioning across renewable fuels, bio-based chemicals, and industrial heat. Feedstock from 381 grape plantations; ~15 identified offtakers enable consistent demand and integration.

Technology: Fast pyrolysis enables conversion of pruning and trimming residues into bio-oil - a pathway to renewable heat, power, and transport fuels, with potential for integration into chemical value chains. European fast pyrolysis players offer scalable technology that can be integrated with Pordenone's wood and agricultural residues. Industry consolidation around standardized plant concepts ensures low technology risk and immediate pilot readiness.

Implementation Framework: Long-term supply contracts with regional grape cultivation operations providing biomass aggregation. Capital intensity reduction through agricultural partnerships and equipment provider financing arrangements. Direct partnerships with regional utilities, refineries, and chemical manufacturers ensuring guaranteed offtake



BREAD WASTE CIRCULAR VALUE CHAIN

Market Opportunity: Convert bread waste (carbohydrate-rich) into lactic acid for food, pharma, and bioplastics. Pordenone hosts 72 bread manufacturers, established fermentation partners, and ~150 identified off-takers -forming a good pilot base. Sustainable-feedstock origin enables premium pricing and high-value chemical conversion.

Technology: Fermentation and enzymatic hydrolysis technologies from established providers including Corbion Netherlands, Galactia Belgium, and Jungbunzlauer Switzerland enable efficient carbohydrate conversion with proven scalability.

Implementation Framework: Supply agreements with regional bread manufacturing cluster, joint venture models for risk management, and direct relationships across pharmaceutical and bioplastics sectors.

This initiative engages project partners—including Basel—to co-design pilots that establish local PLA production in the Alpine Space, aligning waste feedstocks, siting, and offtake to create a replicable circular value-chain model.

WOOD RESIDUES CIRCULAR VALUE CHAIN

Market Opportunity: Convert landscape-maintenance wood residues via pyrolysis into biochar for green cement and water filtration with carbon-capture value. In Pordenone, 25 feedstock providers generate biomass supply for dual revenue model combining material sales with carbon dioxide removal (CDR) credits.

Technology. Proven European pyrolysis providers offer commercial-scale plants with operational references. Flexible feedstocks (wood, green waste) and established biochar specs/CORCs enable rapid regional rollout.

Implementation Framework: For Pordenone biochar offer suitable local feedstocks, integration with municipal waste systems, fast deployment, manageable CAPEX. Long-term access to wood residuals can be secure via agreements with landscape service providers. Modular pyrolysis systems enabling regional deployment and capacity scaling. Construction sector partnerships and EU CDR credit mechanism integration

This circular value-chain initiative engages municipal services and offers Heilbronn and Pordenone a joint pathway to co-design pilots and actions, positioning both municipalities as early adopters of scalable negative-emission solutions.



GRAPE POMACE CIRCULAR VALUE CHAIN

Market Opportunity. Convert grape pomace into high-margin polyphenols for nutraceuticals, food preservation, and personal care. Growing demand for natural antioxidants enables premium pricing and import substitution. Regional wineries (26 identified) provide steady residues; coordinated offtake (54 identified) with local brands anchors volumes and accelerates market entry.

Technology. Microwave extraction and fractionation recover polyphenols efficiently.

Implementation Framework. Project partner can secure long-term supply with wineries/cooperatives, select an experienced extraction technology providers, and structure co-investment with plant operators and off-takers.

METAL SLUDGE CIRCULAR VALUE CHAIN

Market Opportunity. Metalworking generates grinding sludges often disposed for a fee. Separating oil and metal converts a cost into revenue for fabricated-metal and machinery/tool manufacturers while reducing hazardous-waste liabilities. Regional volumes enable supply and margin from avoided disposal and sale of briquetted metal.

Technology. Vacuum drying and briquetting separate oil from metal, producing saleable briquettes; solutions have EU references, including sludge-recycling plant in Italy, with turnkey systems from German providers.

Implementation Framework. Project partner can map sludge sources, secure supply, and select an experienced OEM. Pilot vacuum-drying onsite or via third-party facility, validate recovered-metal specs with regional offtakers, structure co-investment or service contracts, compare avoided-disposal savings versus revenues, then scale to multi-site deployment.

STRATEGIC CIRCULAR PATHWAYS: Heilbronn

Table below summarizes five circular value chains for Heilbronn

Table: Circular value chains Heilbronn

Feedstock Source	Output Product	Processing Technology	Market Applications
Landscape/wood-processing residues	Biochar	Slow pyrolysis	Green cement/construction; water filtration; urban soils & CDR uses.
Bread waste (unsold/defect/returns)	Lactic acid	Enzymatic hydrolysis & fermentation	Food & beverage; pharmaceuticals/cosmetics; PLA bioplastics.



Grape pomace (wine production)	Polyphenols	Microwave-assisted extraction (MAE)	Nutraceuticals; meat preservation; beauty & personal care.
Ethanol stillage (chemicals)	Bio-based "leather" biomaterial	Solid-state fermentation	Automotive interiors; home décor & furniture.
Grinding sludge (metalworking)	De-oiled metal briquettes (and recovered oil)	Briquetting press (de-oiling + compaction)	Reuse in machinery/tool and fabricated-metal manufacturing.

WOOD RESIDUES CIRCULAR VALUE CHAIN

Market Opportunity: Convert landscape-maintenance wood residues via pyrolysis into biochar for green cement and water filtration with carbon-capture value. In Heilbronn, 17 feedstock providers generate biomass supply for dual revenue model combining material sales with carbon dioxide removal (CDR) credits. Biochar-based green cement supports carbon sequestration, enabling construction projects to meet carbon targets.

Technology. Proven European pyrolysis providers offer commercial-scale plants with operational references. Flexible feedstocks (wood, green waste) and established biochar facilities enable rapid regional rollout.

Implementation Framework: For Heilbronn biochar offer suitable local feedstocks, integration with municipal waste systems, fast deployment through existing facility. Long-term access to wood residuals can be secure via agreements with landscape service providers. Modular pyrolysis systems enabling regional deployment and capacity scaling. Construction sector partnerships and EU CDR credit mechanism integration

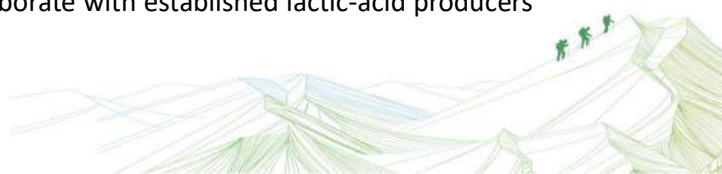
This circular value-chain initiative engages municipal services and offers Heilbronn, Pordenone and Upper Austria joint pathway to co-design pilots and actions, positioning both municipalities as early adopters of scalable negative-emission solutions.

BREAD WASTE CIRCULAR VALUE CHAIN

Market Opportunity: 12 feedstock providers and 33 off-takers in Heilbronn provide solid base for converting bread-production waste (carbohydrate-rich) via enzymatic hydrolysis and fermentation into lactic acid to bioplastics PLA for automotive interior unlocking underutilized streams and premium demand.

Technology: Fermentation and enzymatic hydrolysis technologies from established providers enable efficient carbohydrate conversion with proven scalability.

Implementation Framework: Secure supply agreements with the regional bread-manufacturing cluster. Structure JV/co-investment for risk sharing. Collaborate with established lactic-acid producers



to pilot enzymatic hydrolysis and fermentation. Pursue offtake with automotive sector to meet EU-driven demand and de-risk go-to-market.

This initiative engages project partners—including Basel—to co-design pilots that establish local PLA production in the Alpine Space, aligning waste feedstocks, siting, and offtake to create a replicable circular value-chain model.

STRATEGIC CIRCULAR PATHWAYS: Stuttgart

1,066 companies analysed across Stuttgart and surrounding districts; manufacturing dominates (86.9%), with metalworking/machinery as the core (57%). Three priority value chains (TRL 8–9): grinding-sludge briquetting (metalworking), biochar from landscape/wood residues, and alternative leather from brewers' spent grain (BSG).

Key numbers & signals

- Metalworking feedstock providers: ~528 metalwork companies; briquetting recovers oil and yields metal briquettes. These end products can be reused within the same industry.
- Biochar: ~135 feedstock providers. This biomass undergoes slow pyrolysis to create biochar, which can be used as an additive in cement production, water filtration, and agriculture.
- BSG/alt-leather: 8 breweries (feedstock). The BSG is dried, milled, and combined with plant proteins and fibres, then processed with non-toxic binders and bio-fabrication techniques to produce a biodegradable material that mimics traditional leather. About 130 offtakers can be defined across automotive interiors, fashion, and furniture.

Table: Circular value chains Stuttgart

Feedstock Source	Output Product	Processing Technology	Market Applications
Grinding sludge (metalworking)	De-oiled metal briquettes + recovered oil	Briquetting/pressing (e.g., RUF)	Reuse in machinery/tools, fabricated metals; reduced oil purchases and disposal costs.
Landscape/wood-processing residues	Biochar	Slow pyrolysis	Green cement/construction; water filtration; urban soils & CDR uses.
Brewers' spent grain (BSG)	Alternative leather biomaterial	Drying/milling + protein extraction + bio-fabrication	Automotive interiors, fashion, home décor.



METAL SLUDGE CIRCULAR VALUE CHAIN

Grinding sludge → briquettes + oil

Market Opportunity. Metalworking generates grinding sludges often disposed for a fee. Separating oil and metal converts a cost into revenue for fabricated-metal and machinery/tool manufacturers while reducing hazardous-waste liabilities. 528 metalworking firms enable pooled sludge volumes. Briquetting converts a disposal cost into metal value and recovered oil.

ZF Friedrichshafen AG: Recovery plant located at Passau and Thyrnau plants in Germany. ZF Friedrichshafen AG, one of the world's largest automotive suppliers. Input: Grinding sludge (250-300 tons per year in Thyrnau, less in Passau). Recovery: Oil is pressed out and collected via a two-stage filtering system (removes particles over 160 µm and 40 µm). Reuse: Oil is settled, filtered, and then directly reused in grinding machines, minimizing the purchase of new oil. Briquettes: The residual metal-rich sludge is compacted into briquettes for easier, less costly disposal or potential recycling.

Technology. Automated presses de-oil sludge and compact metal; proven at ZF with RUF presses. Briquetting compresses grinding sludge - a metalworking byproduct made up of roughly equal parts steel particles and grinding oil - into de-oiled metal briquettes. This process effectively recovering most of the residual oil. The process is fully automated, requiring minimal employee input and streamlining both waste handling and oil recovery for reuse.

Implementation Framework. Project partner can map sludge sources, secure supply, and select an experienced OEM. Pilot vacuum-drying onsite or via third-party facility contract oil take-back and briquette offtake; scale with on-premise presses at anchor plants using savings-share or lease-to-own.

This circular value-chain initiative engages municipal services and offers collaboration with Heilbronn, Pordenone and Upper Austria to co-design pilots and actions.

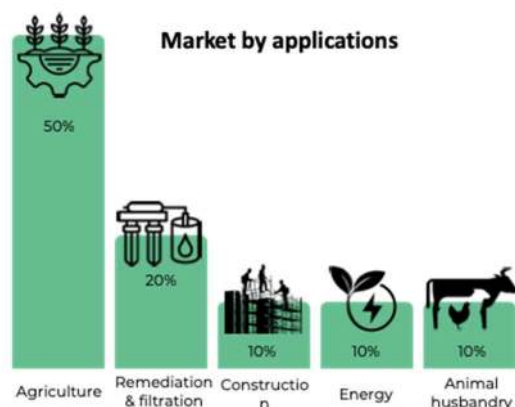
WOOD RESIDUES CIRCULAR VALUE CHAIN

Wood Residues → Biochar - Green cement

Market Opportunity: Convert landscape-maintenance wood residues via pyrolysis into biochar for green cement and water filtration with carbon-capture value. In Stuttgart, +135 feedstock providers generate biomass supply for dual revenue model combining material sales with carbon dioxide removal (CDR) credits. +147 off-takers can be engaged from agriculture, green cement and water filtration. Biochar-based green cement supports carbon sequestration, enabling construction projects to meet carbon targets.

Europe insight: By the end of 2024, Europe's total number of production plants is projected to exceed 220 installations. Additionally, the production capacity is anticipated to reach 115,000 tonnes in 2024.





Sales of biochar in the region are predicted to rise at an exceptionally high CAGR of 16.5% and reach US\$ 9.78 billion by 2033-end. *European Biochar Industry, 2023, Fact.MR's research and consulting*

Technology. Proven European pyrolysis providers offer commercial-scale plants with operational references. Flexible feedstocks (wood, green waste) and established biochar facilities enable rapid regional rollout.

Implementation Framework: For Heilbronn biochar offer suitable local feedstocks, integration

with municipal waste systems, fast deployment through existing facility. Long-term access to wood residuals can be secured via agreements with landscape service providers. Modular pyrolysis systems enabling regional deployment and capacity scaling. Construction sector partnerships and EU CDR credit mechanism integration

This circular value-chain initiative engages municipal services and offers Heilbronn, Stuttgart, Pordenone, and Upper Austria joint pathway to co-design pilots and actions, positioning both municipalities as early adopters of scalable negative-emission solutions.

Brewers' spent grain (BSG) circular value chain

BSG → alternative leather

Market Opportunity: Eight breweries provide BSG for bio-based "leather." Automotive, fashion, and furniture buyers in the region seek compliant bio-materials; early qualification with OEM/Tier-1s unlocks pull-through demand.

Table: Alternative leather market insights

Market	Examples
Automotive	Seat upholstery, steering wheel covers, interior panels.
Fashion	Footwear, handbags, apparel, accessories.
Furniture	Sofas, chairs, home décor.
Aviation	Seating and interior surfaces.
Luxury goods	Bags, wallets, belts, premium accessories.

Technology. Alternative leather is produced from brewers' spent grain (BSG), a byproduct of beer brewing. The BSG is dried, milled, and combined with plant proteins and fibers, then processed using non-toxic binders and bio-fabrication techniques to form a durable, flexible, and biodegradable material that mimics traditional leather. This leather alternative is free from animal products and plastics, making it a sustainable option for fashion, home goods, and automotive interiors.

Implementation framework: Brewer's spent grain is the most abundant by-product. With every 100 liters of beer yielding almost 20 kilograms of wet BSG. Project partner can discuss current practice on using BSG with brewers, and define options for collaboration with OEM for pilot runs. Hold discussions

to surface motivation and barriers, align specs and pricing, engage technology providers, and structure JV/co-investment with committed offtake.

Definition of pilot cases and strategies

Joint steps towards pilot cases

The first step towards pilot cases was the previously mentioned Value Chain analysis for each region. The second step was to meet with the municipalities of our regions to discuss the analysis and find out which pilot cases can be defined. Therefore the team set up a networking event in Stuttgart at the pilot case for Stuttgart in the pop-up space RETHINKING directly at the main station and open for the civil society. The RE-INCITE consortium met up for 2 whole days on 10th and 11th July and discussed several opportunities. On the first day the Value Chain analysis was shown towards the participants of the workshop. Participants were the municipality of Heilbronn, municipality of Pordenone, municipality of Stuttgart. Two of the Advisory Board members were supporting which was Prof. Dr. Andreas Reichert from the State university of Baden-Württemberg and Christian Kneidinger from the University of Applied Sciences Upper Austria. Also present was the Technology Park Ljubljana from Slovenia and BaselCircular from Switzerland. Our best practice examples Stuttgart and Basel presented their cases towards the audience. The agenda for the first day was as follows:

The poster is for an event titled "Clusters & Municipalities: Building Circular Regions Together" with the subtitle "Best Practices in Circular Economy & Pilot Strategy Co-Creation". It is scheduled for July 10th, 2025, at Königstraße 1A, 70173 Stuttgart. The agenda includes arrival, a presentation by Eberhard Wachter, a workshop with Alexandra Wolf and Mateja Dermastia, lunch, another presentation by Carole Tornay, a second workshop with Alexandra Wolf and Michela Pivetta, and a wrap-up. A QR code is provided for registration. Logos for InnoReg, Alpine Space, and RE-INCITE are at the bottom.

JULY 10th, 2025
KÖNIGSTRASSE 1A, 70173 STUTTGART

**Clusters & Municipalities:
Building Circular Regions Together**
Best Practices in Circular Economy & Pilot Strategy Co-Creation

09:30 – 10:00 Arrival & coffee
10:00 – 10:30 The Role of Regions in Driving Circular Economy: Best Practice Stuttgart (Speaker Eberhard Wachter, WRS)
10:30 – 12:30 Workshop Part 1: Alexandra Wolf (WFG Heilbronn) & Mateja Dermastia (ANTEJA, Slovenia)
• Pitch about CE in municipalities (Best Practice Ljubljana)
• Identify business opportunities
• Select a focus area for replicable pilots with companies
12:30 – 13:30 Lunch & Networking
13:30 – 14:00 The Role of Regions in Driving Circular Economy: Best Practice Basel (Speaker: Carole Tornay, MD of BaselCircular)
14:00 – 15:30 Workshop Part 2: Alexandra Wolf (WFG Heilbronn) & Michela Pivetta (COMET, Italy)
• Define the concrete actions for the replicable pilots
15:30 – 16:00 Wrap up during Coffee Break & Networking

register now & be there on
July 10th, 2025
Königstraße 1A, 70173 Stuttgart

innoReg Alpine Space RE-INCITE

During this workshop several possible pilot cases were jointly discussed and it was decided that the RE-INCITE consortium would elaborate on those the following day:

- Hydrogen waste collection trucks in Heilbronn
- Alternative leather (beer to Automotive/Fashion)
- Landscape Services to Construction Industry
- Bakeries
- Pharma & Chemical
- University of Pordenone & DHBW
- Recycling Wels & Pordenone & Ljubljana
- Wood/Furniture
- Pop Up Space in Pordenone
- Wine Industry
- Biogas supply chain
- Copy/paste BaselCircular model

4 regions were talking about their challenges faced for Circular Economy during the first workshop. Pordenone was explaining that the knowledge about Circular Economy is missing in SME's. They buy wood from Austria for production instead of trying to use local sources. There are a lot of empty spaces in the city center and they have a lack of young and educated people. The city of Heilbronn is dealing with a lot of waste in the inner city and they are thinking about promoting the reusable tableware. In Heilbronn there is also a lot of wine industry which could be used for those pilot cases. In Stuttgart the cleanliness and safety in the city center was discussed and their net zero strategy. Many different strategies are not implemented yet. In Basel they have a mandated net zero target and there is not much production space in Basel. The municipalities itself often focussed on post consumer waste while we also want to target the industry in our project which is possible then through the combination of the various clusters in the consortium.

On the second day at the consortium meeting there was a clear focus on discussing the pilot cases. The following pilot cases were narrowed down:

- Recycling Facility in Upper Austria
- Reusable Cups
- Alternative leather from beer/wine/stillage to Automotive Industry
- Pharma Industry

For those pilot cases the clusters looking into it were defined. WFG would check the pilot cases for reusable cups, wood to hydrogen and alternative leather. BIZ-UP would check the pilot for the recycling facility. COMET would check the pilot for reusable cups as well. ANTEJA would check the pilot case for the pharma industry.

After the workshop and the networking event each cluster went into more background checks and talked again with their municipalities. It seems that some pilot cases are a vision and might be hard to implement. That is why the consortium decided to investigate in as many pilots as they can and see which ones have the potential to be implemented within the RE-INCITE timeframe or beyond.



The following pilot cases are now being pursued:

- Recycling Facility in Upper Austria
- Reusable Tableware
- Wood residue to biochar
- Alternative leather
- Revalorization of industrial waste from metalworking companies

Strategic objectives for the 4 pilots

The main strategic objectives for all 4 pilots are to make it towards implementation and support for the municipalities in all business cases. The goal is to find synergies and knowledge transfer between the Alpine Space Regions. The overall objectives per use case are as follows:

Recycling Facility in Upper Austria

Strategic Objectives:

- Establish a regional lighthouse for advanced recycling technologies and processes.
- Strengthen local value chains by keeping materials in circulation within Upper Austria.
- Scale solutions that can be replicated across Europe, contributing to EU circular economy goals, therefore foster the knowledge exchange
- Build long-term resilience in material supply and reduce dependency on virgin resources.

The Re-Incite Alpine Space Programme is dedicated to strengthening circular economy processes across the Alpine region by fostering collaboration between municipalities, public institutions, businesses, and research organisations in the partner countries. A central aim of the programme is to unlock the potential of resource flows and industrial symbiosis in order to increase sustainability, resilience, and competitiveness in the Alpine Space. Within this framework, Business Upper Austria (Biz-Up) plays a key role in supporting the establishment and strengthening of networks between cities, municipalities, and private-sector companies. The focus lies on facilitating collaboration across governance levels and industries, enabling the development of new circular value chains and innovative business opportunities.

A special emphasis was placed on the cooperation with the City of Wels, which joined the project as a partner city of Biz-Up. This partnership not only ensures strong municipal involvement but also highlights the strategic relevance of Wels as a location for circular economy innovations. The collaboration has centred on the redevelopment of the Recycling Centre (ASZ Wels), which has been identified as a best practice hub for the region.

In parallel, Biz-Up coordinated closely with project partners in applying the Value Chain Generator (VCG) to the regional context. A dataset of more than 1,100 companies in Upper Austria was analysed, revealing concrete circular pathways and pilot opportunities. These insights helped to identify where residual streams can be valorised into high-value products and where cross-sector cooperation is most promising.



One of the strategic ideas considered was the traceability of material flows beyond collection at the ASZ, in order to better monitor and improve circular streams. However, challenges regarding transparency and stakeholder acceptance were recognised as potential barriers.

During subsequent meetings, attention was directed to the planned redevelopment of ASZ Wels and the potential benefits of innovative approaches such as automation, CO₂ reduction, and efficiency improvements compared to the existing facility. In this context, discussions again revolved around material flows and the involvement of companies along the input–output–recycling chain. These exchanges underlined the importance of involving regional waste management and recycling stakeholders in order to strengthen cooperation and knowledge transfer.

Reusable tableware

Strategic Objectives:

- Promote circular consumption models and reduce single-use plastics in everyday life.
- Create scalable business models for reuse systems that can be applied in different regions and events.
- Encourage consumer behavioral change through convenience, design, and awareness.
- Support policy objectives on waste reduction and compliance with EU directives on packaging and plastics.

The pilot case on reusable tableware is designed to demonstrate the feasibility and impact of shifting from single-use plastics to circular, reusable solutions in everyday consumption contexts. By introducing a structured reuse system, the pilot should show if a good return system is implemented this reusable tableware can actually be a benefit and used by consumers.

A strong emphasis will be placed on consumer behavioral change, recognizing that convenience, appealing design, and awareness campaigns are key drivers in motivating people to adopt reusable solutions. Finally, the pilot will need to be aligned with and support policy objectives on waste reduction, contributing to the implementation of EU directives on packaging and plastics and helping stakeholders to meet regulatory requirements.

This case should illustrate how local interventions can deliver measurable environmental benefits while also paving the way for systemic change in consumption and waste management practices.

Alternative Leather from Beer/Wine/Stillage to Automotive Industry

Strategic Objectives:

- Valorize agro-industrial residues (pomace, brewing by-products, stillage) into high-value bio-based materials.
- Drive innovation in sustainable alternatives to traditional leather for automotive and mobility sectors.
- Foster cross-sector collaboration between agriculture, biotech, chemical and automotive industries.
- Position European industry as a leader in sustainable materials and green design.



The planned pilot on alternative leather production aims to transform agro-industrial residues—specifically grape pomace from the wine sector and brewing by-products—into high-value bio-based materials. This initiative represents an innovative approach to valorizing agricultural side streams, reducing waste, and creating new value chains that link primary production with advanced material development. The pilot is strategically designed to contribute to multiple objectives. First, it will valorize agro-industrial residues by converting them into durable, functional, and market-ready bio-based alternatives to leather, thereby supporting resource efficiency and circular bioeconomy principles. Secondly, it seeks to drive innovation in sustainable materials tailored to the requirements of the automotive and mobility sectors, where the demand for low-impact, high-performance alternatives to traditional leather is increasing rapidly. A further objective is to foster cross-sector collaboration, bringing together stakeholders from agriculture, biotechnology, and the automotive industry to co-develop solutions that are both technically robust and commercially viable. This collaborative model underlines the importance of systemic innovation across value chains. This pilot will serve as a cornerstone example of how agro-industrial by-products can be reimaged as strategic resources for Europe’s green transition, reinforcing the continent’s role at the forefront of sustainable material development.

Wood residue to biochar

Strategic Objectives:

- Promote circular biomass management and reduce carbon emissions by converting wood residues into biochar for climate-positive applications.
- Develop market and application pathways for biochar (e.g., in agriculture, construction, carbon credits) to validate business opportunities.
- Encourage adoption of sustainable practices through demonstration of biochar’s benefits for soil, energy, and carbon sequestration.
- Support policy objectives on climate action and circular economy in line with EU directives and the Green Deal.

The planned pilot on wood residue conversion to biochar is designed to demonstrate the potential of circular biomass management as a climate-positive solution. By transforming wood residues into biochar, the initiative addresses two key challenges simultaneously: the reduction of carbon emissions through stable carbon sequestration and the creation of value-added applications for biomass side streams. The pilot is structured around four main strategic objectives. First, it aims to promote circular biomass management by closing material loops and utilizing wood residues that would otherwise be underexploited, while contributing to long-term carbon storage. Second, it will develop market and application pathways for biochar, focusing on high-potential sectors such as agriculture (soil improvement and fertility), construction (as a component in sustainable building materials), and carbon markets (generation of verifiable carbon credits). A third objective is to encourage the adoption of sustainable practices by demonstrating the environmental and economic benefits of biochar. These include improved soil health and crop yields, enhanced energy efficiency when integrated into energy systems, and significant contributions to carbon sequestration. Finally, the pilot aligns with and supports EU policy objectives on climate action and the circular economy, directly contributing to the implementation of the European Green Deal, the Circular Economy Action Plan, and renewable energy and emissions reduction targets. By generating practical insights into biochar production and



application, the initiative seeks to provide evidence for both policymakers and market actors on the viability of biochar as a cornerstone technology for Europe's green transition.

Revalorization of industrial waste from metalworking companies

Strategic Objectives:

- **Revalorize industrial metal waste** from local mechanical engineering SMEs transforming shavings, scraps and non-compliant components into new high-value products.
- **Create an integrated circular supply chain** connecting upstream producers (metalworking SMEs) with downstream processors (foundries, technology providers and designers).
- **Strengthen public–private cooperation** by linking COMET companies with the Municipality of Pordenone as a “lighthouse municipality.”
- **Develop visible, community-oriented outputs** (urban furniture, cultural installations, municipal gadgets) to showcase circular economy in practice.
- **Ensure replicability of the model** across other municipalities and regions, aligning with EU circular economy and industrial symbiosis goals

The pilot specific strategy selected by **Cluster COMET** together with the **Municipality of Pordenone** will focus on the revalorization of industrial waste from metalworking companies. The context is that many SMEs in the metalworking sector produce metallic waste (shavings, scraps, non-compliant components) which today ends up in traditional recycling, but without integrated supply chain logics. **COMET** is a cluster representing metalworking companies in Friuli Venezia Giulia. Its role in the project is to involve local companies, gather needs, and propose concrete solutions that can become replicable models. The **Municipality of Pordenone** serves as the public authority of reference and as a “lighthouse municipality”: its role is to facilitate policies, provide regulations and infrastructure, and ensure that the results are useful for other administrations as well. Together, they will develop a pilot project consistent with the concept of a **circular and resilient supply chain**, capable of:

- reducing waste and resource consumption,
- reusing materials and by-products,
- strengthening cooperation between companies, citizens, and public administration.

Key Stakeholders and resources for the 4 pilots

Pilots: Wood residue to biochar, Alternative leather, reusable tableware

Wirtschaftsförderung Raum Heilbronn (WFG Heilbronn)

WFG Heilbronn is the economic development agency for the Heilbronn Area in Baden-Württemberg, Germany. It acts as a central driver for sustainable regional growth and transformation. Heilbronn Area is defined as Heilbronn City and Heilbronn County with 485.863 inhabitants and an annual GDP of 32 bn EUR.

The agency's core tasks include:

- **Business services & consulting** — supporting companies with funding advice, business succession, start-up support, and networking.



- **Location & settlement services** — offering data on sites and real estate, assisting firms that wish to establish or expand operations in the region.
- **Sector dialogues & innovation projects** — fostering collaboration across sectors such as automotive, plastics, metals, hydrogen, and space, and driving region-wide transformation initiatives.
- **Skills development** — organizing training, seminars to strengthen the regional businesses and cooperation with the employment agency in Heilbronn
- **Networking & events** — organizing training, seminars, and networking events to strengthen entrepreneurial knowledge of C-level managers and experts.

With its strategic focus on supporting small and medium-sized enterprises (SMEs) through transformative challenges, WFG Heilbronn plays a central role in shaping the economic future of the Heilbronn region.

At this moment, Heilbronn area ranks among the top 10 % of all German Cities and Counties (max. 400 entities):

- 12: Future Prospects (the overall score)
- 10: Competitiveness & Innovation
- 14: Demography
- 34: Economy & Workforce
- 35: Prosperity & Social Situation

(Source: Prognos, Zukunftsatlas der Regionen 2025)

WFG has been founded in 1995 and has gained an ever growing importance and influence in the region. Heilbronn Area has two main drivers for growth and prosperity: Retail and Manufacturing, esp. Automotive with its suppliers, service providers and machinery providers. WFG is deeply involved in the support for the regional manufacturing industry. Its industrial cluster TRANSFORMOTIVE DIALOG has been awarded with the silver label of the European Secretariat for Cluster Analysis. In 2002 the Association of German Chambers of Commerce and Industry together with the National Ministry of Economic Affairs recognized TRANSFORMOTIVE as best Industry Support Initiative in Germany.

Based on sound strategies both for Heilbronn Area and TRANSFORMOTIVE DIALOG WFG initiates business support programs for the established companies in the Heilbronn area. WFG actively seeks involvement in regional, national and European grant schemes to leverage its business support efforts. For this, WFG has established a dozen or more close partnerships with other European regions / business support organisations / clusters.

WFG is also involved in infrastructure development, esp. in the energy sector. Originally started as a means of technology transfer, WFG has its own hydrogen competence center and is a key driver in organizing the fuel switch from natural gas to hydrogen in the Heilbronn area and beyond.

Heilbronn area is part of the Economic Region Heilbronn-Franconia and the European Metropolitan Region Stuttgart. WFG is actively involved in strategy development on the Heilbronn-Franconia level and has a seat on the board of its Regional Development Agency.



In the first project phase, Biz-Up and partners applied the Value Chain Generator (VCG) to a dataset of more than 1,100 companies in Upper Austria, identifying concrete circular pathways and pilot opportunities.

City of Heilbronn – Urban Sustainability Office

The Urban Sustainability Office (USO) is the central city administration unit in Heilbronn responsible for coordinating sustainability, climate protection, and forward-looking urban development. Its tasks include developing and implementing sustainability strategies, coordinating climate targets (for example, achieving climate neutrality by 2035), facilitating citizen participation, managing funding and projects related to environment and sustainability, and representing Heilbronn in European/international sustainability networks. Sustainability Management & Monitoring. It maintains a sustainability reporting process; Heilbronn published a first sustainability report in 2020 and plans to update it regularly with citizen involvement. It monitors climate protection progress via the “Klimaschutz-Masterplan” for 2035, including greenhouse gas emissions, etc. They run programs for businesses for example the KLIMAfit programme: helping companies assess their greenhouse gas balance, develop action plans, and implement mitigation measures. They also run the “WIR-Pakt” — a pact/initiative to mobilize local organizations, companies, institutions to commit to climate protection.

Large local companies and SME's

Large local companies and SME's will be approached to start building the resilient circular supply chain and to find out where we can assist in optimising the supply chain. For the wood residue to biochar pilot a producer of biochar is approached. For the reusable tableware a local producer of this tableware is approached and for the alternative leather meetings with Wine producers will be set up.

Key stakeholders in this process include:

- City of Heilbronn – municipal partner
- Re-Incite-project partners: Facilitator of networks, coordinator of activities, and organiser of stakeholder events.
- VCG (Anteja): methodological partner ensuring evidence-based matchmaking for circular value chains.
- Representatives of cities, municipalities, local authorities, and public institutions
- Private-sector companies – Local and global companies, large and SME's
- Research and innovation actors – enabling technological feasibility and scaling solutions across the Alpine region.

Business Upper Austria – OÖ Wirtschaftsagentur GmbH

Following the data analysis conducted with the Value Chain Generator (VCG) and in close coordination with the partner city of Wels, it became clear that the Recycling Centre (ASZ Wels) is one of the most important projects in the field of circular economy for the City of Wels. As a resource hub, ASZ Wels collects and manages a wide variety of material streams that provide the foundation for new value chains, including:

- Plastics (packaging materials, composites, hard plastics)
- Construction and demolition materials (concrete, bricks, plaster, tiles)
- Wood residues (treated/untreated wood, furniture, garden waste)



- Metals (ferrous/non-ferrous scrap, metal sludge from machining)
- Electrical and electronic equipment (household appliances, IT, cables)
- Hazardous waste and liquids (oils, solvents, paints, chemicals)
- Batteries and accumulators
- Organic waste streams (green cuttings, biodegradable residues)

For this reason, the project focus was placed on the ASZ, with the aim of exploring how this facility can serve as a starting point for promoting and scaling circular economy processes. In this context, the O.Ö. Landes-Abfallverwertungsunternehmen GmbH (LAVU) was identified as a crucial partner, given its decisive role in providing reliable data on material flows and managing waste processes across Austria and depending on the material also in neighbour countries.

Looking ahead, in the second project phase, cooperation with LAVU will be expanded. By providing comprehensive datasets on material streams, LAVU enables the integration of ASZ-specific flows into the VCG analysis (in collaboration with Anteja). This will allow for more targeted matchmaking between ASZ resources and regional as well as cross-border industrial partners, strengthening Wels' role as a circular resource hub in the Alpine Space.

In addition to analytical work, stakeholder engagement is a central resource. To this end, Biz-Up, together with the City of Wels, will organise an online event in November 2025 and one in-person event together with the city of Wels in 2026. These events are designed not only to present and discuss circular economy approaches but above all to bring together the relevant stakeholders and key players from municipalities, companies, clusters, and research institutions. By inviting experts and keynote speakers from the circular economy field, these events will serve as a platform for knowledge exchange, networking, and co-creation of new projects. The explicit goal is to initiate new partnerships, stimulate pilot activities, and create synergies that extend beyond Wels and Upper Austria into the wider Alpine region.

Key stakeholders in this process include:

- City of Wels – municipal partner and initiator of the ASZ redevelopment.
- ASZ Wels – innovative recycling hub and regional best practice facility.
- O.Ö. Landes-Abfallverwertungsunternehmen GmbH (LAVU) – providing operational expertise and critical data on material flows.
- Re-Incite-project partners: Facilitator of networks, coordinator of activities, and organiser of stakeholder events.
- VCG (Anteja): methodological partner ensuring evidence-based matchmaking for circular value chains.
- Representatives of cities, municipalities, local authorities, and public institutions
- Private-sector companies – dairies, bakeries, recycling firms, construction companies, and technology providers who valorise residuals into new products.
- Research and innovation actors – enabling technological feasibility and scaling solutions across the Alpine region.

This integrated approach ensures that Wels and Upper Austria evolve into a model region within the Re-Incite project. By combining a regional pilot (ASZ Wels), methodological tools (VCG), and strategic



stakeholder dialogue (events and meetings during the Re-Incite project), the programme demonstrates how local resource flows can be scaled up to regional and cross-border levels across Europe.

Information about ASZ Wels as a Lighthouse Facility and hub for circular economy:

- The redevelopment is closely connected to the ASZ project, which is revolutionising waste management in Wels by combining full automation, AI-driven solutions, and a digital circular economy model. Key innovations include:
- AI-supported optical detection systems that identify waste fractions and provide real-time feedback to users, reducing incorrect disposals from 12–15% to below 5% and improving material purity from 80% to $\geq 85\%$.
- A thermal camera fire detection system with automated emergency response, significantly improving safety.
- An LLM-powered chatbot that helps citizens correctly identify waste types and disposal options, complemented by a mobile app and e-learning platform for seamless interaction, access control, and even a benefit/sanction system to promote correct sorting behaviour.
- Operational efficiency gains, reducing staffing needs and generating annual savings of around €250,000.
- A digital marketplace (TRL 5 pilot) where citizens can sell, lend, or donate underused products locally – extending product lifecycles, reducing waste volumes, and achieving significant CO₂ reductions.

By combining these features, the ASZ project aims to:

- Increase recycling and re-use rates from 72% to $\geq 80\%$
- Reduce landfill waste by 40%
- Cut CO₂ emissions by 20%

The ASZ thus goes beyond being a recycling facility and becomes a user-centric, digitally enabled hub for prevention, reuse, and recycling, aligned with EU circular economy and zero-pollution goals. The optimum impact during the project should be that this integrated approach ensures that Wels and Upper Austria evolve into a European model region within the Re-Incite project. By combining cutting-edge infrastructure (ASZ), comprehensive data (LAVU), analytical tools (VCG), and strategic stakeholder dialogue, the programme should demonstrate how local material flows can be scaled up to regional and cross-border circular economy processes across the Alpine Space.

Revalorization of industrial waste from metalworking companies

The pilot on the revalorization of industrial waste in Pordenone relies on a strong network of actors whose complementary roles and resources ensure its effectiveness and replicability. Each stakeholder brings a specific expertise and mandate, together forming a coherent system that bridges industry, policy, culture, and community.

Cluster COMET – Coordinator and Industrial Aggregator

Cluster COMET serves as the central coordinator and industrial aggregator of the pilot. Its primary mission is to mobilize and engage SMEs in the regional metalworking sector, creating a united front of



companies willing to experiment with new circular models. Through its extensive network of enterprises, COMET facilitates collaborations between upstream producers, downstream processors, technology providers, and designers. This role is complemented by the cluster's ability to gather company needs, monitor pilot progress, and translate results into replicable models for other regions. COMET brings significant technical expertise in industrial processes and symbiosis, as well as established communication channels that allow best practices to be shared effectively across the network.

Municipality of Pordenone – Public Authority

The Municipality of Pordenone is the institutional anchor of the project, acting both as public authority and as “lighthouse municipality.” Its responsibility lies in providing regulatory support, facilitating waste collection and reuse, and ensuring that infrastructures are adapted to new circular supply chain logics. The city also functions as a showcase for the initiative, connecting pilot results to the cultural visibility offered by its role as Italian Capital of Culture 2027. By promoting workshops, exhibitions, and public installations, the municipality guarantees that circular economy practices reach and engage citizens directly. It contributes municipal infrastructure, political endorsement, cultural venues, and communication platforms, while also leveraging funding schemes and policy tools to support long-term scalability.

Local SMEs – Metalworking companies

Local SMEs are the cornerstone of the pilot, as they supply the raw material flows—metal shavings, scraps, and non-compliant parts—that form the basis for revalorization. Beyond material supply, these companies actively collaborate in testing new reuse processes and co-designing products, thus playing an essential role in ensuring feasibility and cost-effectiveness. Their involvement provides valuable insights into how circular processes can be integrated into industrial workflows. With their continuous production of metallic by-products, technical staff, and willingness to innovate, SMEs are vital drivers in transforming the regional industrial ecosystem from linear to circular models.

Foundries and Technology Providers

Foundries and technology providers represent the technological enablers of the initiative. They are tasked with transforming industrial waste into new, high-value products through processes such as melting, smelting, plasma treatments, and powder-bed additive manufacturing. Their expertise and machinery ensure that prototypes—ranging from urban furniture to cultural installations and municipal gadgets—can move from concept to reality. They also bring research and development capabilities in materials engineering and have the capacity to scale innovations from experimental pieces to industrial-level outputs, securing both creativity and technical feasibility.

ISIA Roma Design and Liceo Artistico “E. Galvani” – Cultural and Educational Partners

The cultural and educational dimension of the pilot is entrusted to ISIA Roma Design and the Liceo Artistico “E. Galvani” in Pordenone. These institutions reinterpret industrial waste through the lens of design and art, transforming it into high-value cultural and functional outputs. Their role is crucial in linking the technical processes of revalorization with the public imagination, co-creating urban furniture, artworks, and promotional items that make the circular economy visible and relatable. They bring creative expertise, access to design studios, and strong connections to cultural events and citizen



participation networks. By engaging students, artists, and the community, these institutions amplify the social resonance of the project and strengthen its cultural impact.

Conclusion and next steps

Outlook for the Next Period & Conclusion for the Recycling Facility in Upper Austria

In the next project phase, Biz-Up will build on these findings by:

- Using the VCG as a practical matchmaking tool to expand the network of ASZ Wels, helping to connect raw material streams with new buyers and processors across the Alpine region.
- Showcasing ASZ Wels as a best practice case and expanding its role as a hub for regional and cross-border circular economy.
- Leveraging on the results from the VCG to identify and connect with companies involved in the reuse, processing, and reintegration of secondary raw materials into the value chain.
- Advancing pilot discussions on whey-to-proteins, bread-to-lactic acid, and wood-to-biochar, engaging both regional stakeholders and potential cross-border partners.
- Continuing to strengthen networks between municipalities, clusters, and companies by organising and participating in exchange events that facilitate dialogue, capacity building, and the development of new circular value chains.

The first project period demonstrated the strong potential of Wels as a partner city and the recycling center ASZ as a regional best practice hub within the Alpine Space. The involvement of Business Upper Austria ensured that municipal, regional, and private-sector stakeholders can be effectively connected, setting the stage for innovative pilot activities.

Looking ahead, the next steps will focus on expanding the role of ASZ Wels, integrating the VCG as a practical tool for stakeholder matching, and strengthening cross-border collaboration across the Alpine Space. These measures will ensure that the project continues to deliver tangible results and contributes to the development of robust and scalable circular economy solutions.

By combining regional pilots (ASZ Wels) with the methodological tool (VCG), Biz-Up ensures that Upper Austria is positioned as a model region within the Re-Incite project, demonstrating how circular flows can be scaled up from municipal to cross-border levels.

Outlook for the next period & Conclusion for the Reusable tableware pilot

In the next period WFG will be meeting up with a local tableware company, who are trying to implement a business case for reusable tableware and will be guiding them in their ideas. For Heilbronn there is a concrete idea, but it needs to be checked to see if this is feasible. In this period WFG talked to Frankfurt for their key success factors with the #MainBecher. It will be evaluated if funding can be found for the business case in Heilbronn. The business case will be reviewed and discussed with the company who wants to implement it.

The pilot demonstrates significant potential for scaling reusable tableware systems across regions and events, provided that operational feasibility and stakeholder commitment are secured. By combining



convenience, effective design, and public awareness measures, the initiative can drive behavioral change and help municipalities meet policy objectives on waste reduction. With further validation and financial support, the *Reusable Tableware* pilot can serve as a replicable model for circular economy solutions in the Alpine Space and beyond. This pilot case is partly political and partly depending on the usage of reusable tableware by citizens.

Outlook for the next period & Conclusion for Alternative leather

The Alternative Leather pilot has already gained positive momentum, with WFG successfully engaging an Advisory Board member in Heilbronn who is actively evaluating opportunities and offering his network to support the initiative. This strong endorsement underlines both the relevance and potential of the pilot.

Looking ahead, the next period will focus on deepening regional engagement by approaching additional wine companies in the Heilbronn area. The aim is to explore the valorization of wine residues, such as pomace, not only as fertilizer but also as valuable input material for industries interested in sustainable alternatives like leather substitutes.

To maximize impact, this approach should not remain limited to Heilbronn alone. Other clusters within the project are encouraged to investigate similar opportunities within their own regions. This topic will therefore be placed on the agenda of the next monthly project meeting to initiate cross-cluster learning and potential collaboration.

Outlook for the next period & Conclusion for the Wood residue to biochar pilot

The Wood Residue to Biochar pilot has made tangible progress, with a key visit conducted to a major company in Heilbronn that operates a pyrolysis facility and produces biochar. The company has shown openness to expanding the value chain and exploring options for the permanent storage of biochar, highlighting significant potential for scaling the pilot.

The next critical step involves leveraging the Value Chain Generator (VCG) to identify potential sales markets and engaging with the company currently responsible for distributing the biochar. Ensuring that this distributor remains fully informed and involved is essential, as they play a central role in the decision-making process and in realizing the pilot's commercial opportunities.

Outlook for the next period & Conclusion for the revalorization of industrial waste from metalworking companies

As part of the strategy, **feasibility studies and exploratory assessments will be carried out** with regard to the following actions:

- Establishing a platform for the recovery and reuse of industrial metals across COMET's SME network.
- Revalorizing metal sludge through smelting to produce urban furniture (e.g., signage for Pordenone), engaging both waste producers and local foundries.
- Treating and reusing industrial waste for commissioned artworks (to be installed in the Municipality of Pordenone, Italian Capital of Culture 2027) and for portable gadgets (e.g.,



jewelry, 3D-printed promotional items), making use of advanced technologies such as plasma processing and powder-bed printing.

- Define clear KPIs (e.g., tons of waste revalorized, SMEs engaged, CO₂ reductions and citizen reach).
- Expand the industrial network by connecting SMEs with downstream processors and technology providers.
- Deepen citizen engagement through participatory workshops and cultural initiatives linked to municipal outputs.
- Plan for long-term scalability, ensuring results extend beyond 2027 into lasting industrial and cultural synergies.

The first project period demonstrated the strong potential of Pordenone as a lighthouse municipality and of Cluster COMET as an industrial aggregator within the Alpine Space. Their joint involvement has ensured that municipal, regional and private-sector stakeholders can be effectively connected, laying the foundation for innovative circular economy pilot activities. Looking ahead, the next steps will focus on expanding the role of Pordenone as a cultural and policy hub, while strengthening COMET's capacity to connect SMEs across the value chain. This includes advancing pilot actions on the recovery and reuse of industrial metals, testing innovative applications such as urban furniture and 3D-printed promotional items, and linking results to the visibility offered by Pordenone's designation as Italian Capital of Culture 2027. These measures will ensure that the project continues to deliver tangible results and contributes to the development of robust and replicable circular economy solutions. By combining municipal leadership (Pordenone) with industrial expertise (COMET), the pilot positions Friuli Venezia Giulia as a model region within the Re-Incite project, demonstrating how circular flows can be scaled from local industrial symbiosis to broader European networks.



Appendix –Two Value Chains as example per VCG:

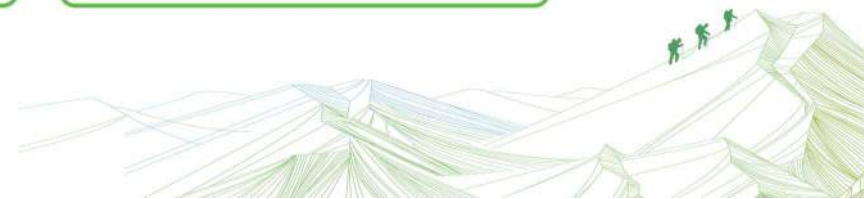
BIOCHAR SCALE-UP WITH EXISTING FACILITY



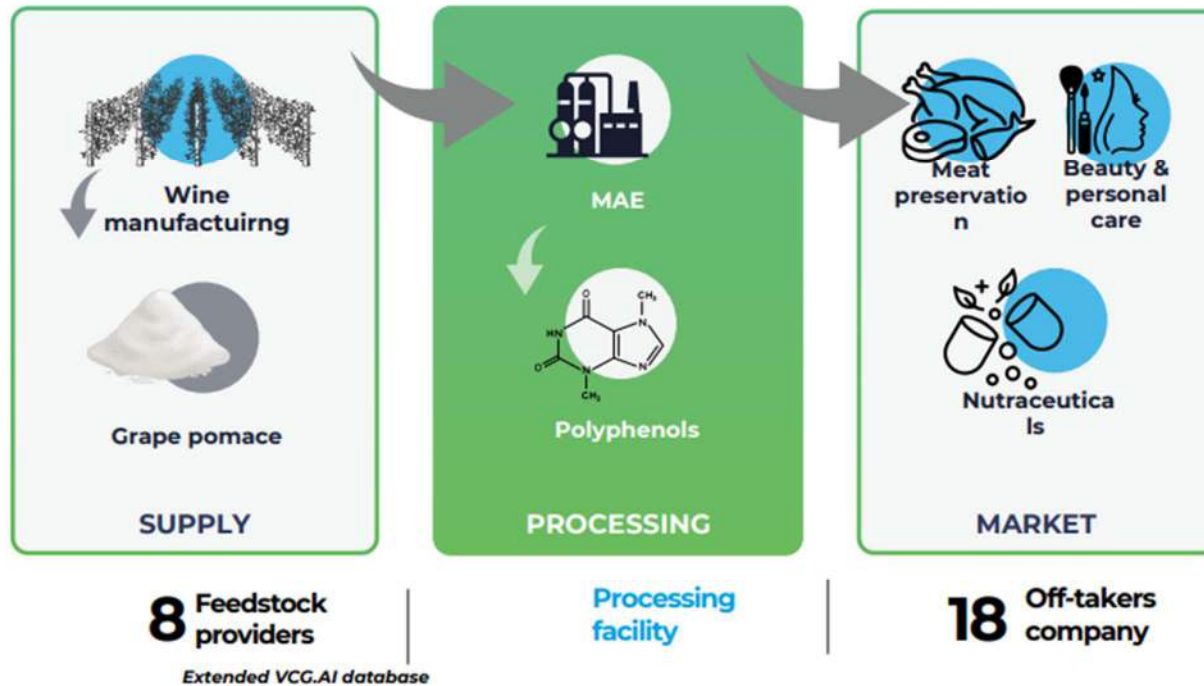
Use biochar in the city level as carbon dioxide removal (CDR) measure.



This project is co-funded by the European Union through the Interreg Alpine Space programme” (cf. SC article 7) in addition to the Interreg reference included directly in the project logo with the text “Co-funded by the European Union



SCALABLE EXTRACTION OF BIOACTIVES FROM GRAPE POMACE



Polyphenols are extracted from grape pomace (the skins, seeds, and stems)

Solid-liquid extraction with food-grade solvents such as water, ethanol, or novel deep eutectic solvents provides ingredients for food, cosmetics and pharma industry

