# 70 Circular Business Stories

How companies are putting circular business models into practice.




From products to services, from reuse to recovery - explore how businesses are turning circular ideas into real impact.

- 6 BUSINESS MODELS
- 70 PROJECTS
- MULTIPLE SECTORS & COUNTRIES

Funded by the European Union

# **Up2Circ** – Boosting the uptake of circular business model, product and process innovation

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**D4.4 Catalogue of Up2Circ Success Stories**

**Name of project partner**: Justyna Barska, Lubelska Fundacja Rozwoju (LFR)

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# Circular Innovation across Europe

The Up2Circ Success Stories Catalogue aims to inspire and guide businesses in their transition towards a circular economy by showcasing **70 success stories from 12 countries and 13 industrial ecosystems**. By sharing practical examples of circular innovation, the catalogue seeks to raise awareness, encourage knowledge exchange and help companies identify opportunities to integrate circular principles into their own activities.

Covering diverse fields, from green chemistry and renewable energy to textiles, agri-food and manufacturing, the stories demonstrate how businesses of different sizes and sectors can rethink resource use, adopt more sustainable practices and explore new pathways towards circular business models.




Up2Circ

**Boosting the uptake of circular business model, product and process innovation**

Funded by the European Union

# Driving Circular Business Transformation

The catalogue examines six circular business models that enable companies to transform their products, processes and services: **circular product design, circular supply chains, product-as-a-service, product life extension, recovery and recycling, and the sharing economy**. It highlights how these models can reduce dependence on virgin resources, extend product lifecycles, improve material recovery and unlock new value creation opportunities across the entire value chain.

Behind these stories lies a shared commitment to helping businesses turn their vision into tangible results. The Up2Circ project was implemented by **seven partners from seven European countries**, all members of the **Enterprise Europe Network**. By combining their expertise in supporting small and medium-sized enterprises, fostering innovation and promoting sustainable business development, the partners supported companies across 27 EU Member States, empowering them to embrace circular business models and advance their transition towards a more sustainable and resource-efficient economy.






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the European Union

# Up2Circ Ambassadors

But the impact of these stories goes beyond the catalogue itself. The companies featured are part of the **Up2Circ SME Ambassadors network**, a community of businesses whose experiences, achievements and lessons learned can inspire other SMEs to take their own steps towards circularity. By sharing their journeys, the Up2Circ Ambassadors demonstrate that change is possible, that circular solutions can work in practice and that every business, regardless of its size or sector, can contribute to a more sustainable economy. Their stories serve as real-life examples for companies looking for ideas, encouragement and practical pathways to get started.

Europe's circular transition is shaped by interconnected industrial ecosystems, with different sectors advancing circular solutions across value chains.

Together, these ecosystems highlight opportunities to foster collaboration, improve resource efficiency, reduce dependence on primary resources and strengthen the resilience of regional economies.

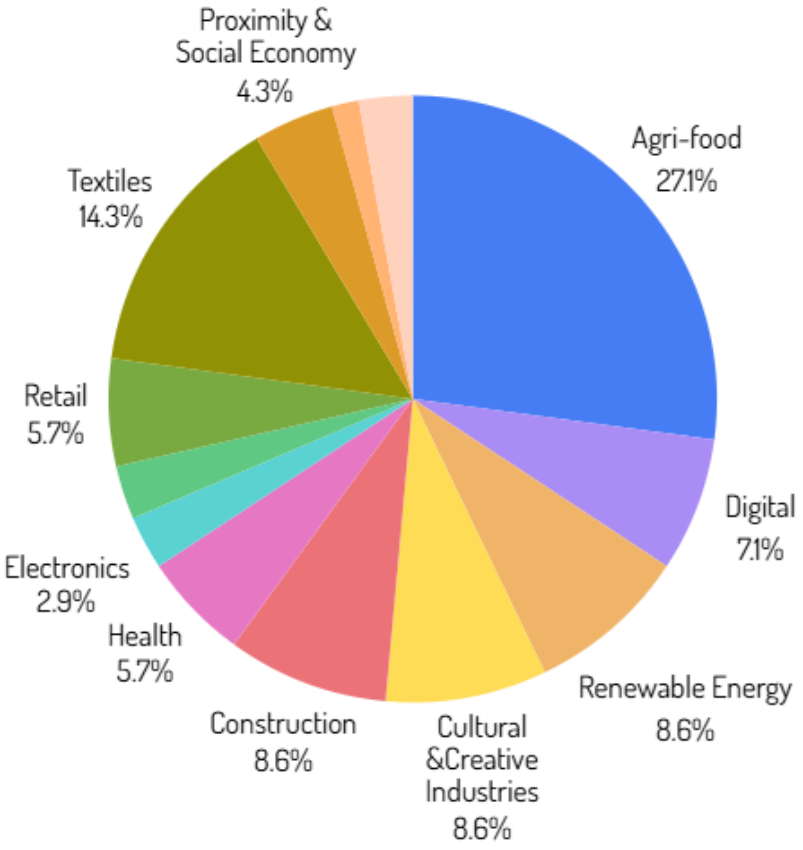



Fig. 1 Main industrial ecosystems represented in the Up2Circ success stories catalogue



Funded by the European Union

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# The Smart Lolipop

Company
**Happy Innova SL**

Country
**Spain**

Circular Business Model
**Circular product design**

Sector
**Health**

## Rethinking Single-Use Medical Devices

### Challenge

- Medical devices are typically designed for **single use**
- Needed to **assess the technical, regulatory**, and **financial feasibility** of reusing a key component
- **Reduce waste** without compromising safety or performance

### Solution

- Evaluated the reuse of a component in **The Smart Lollipop One**
- Assessed technical, regulatory, and **economic feasibility**
- Developed a **tool to model environmental and financial impacts** under different scenarios

### Impact

- 92% **reduction in waste** generation
- 28.6% **lower $CO_2$ emissions** per unit
- **Identified** key partners and **regulatory requirements** for future implementation
- Created a decision-support tool for **scaling a circular model**

### Key takeaway

**Circular medical devices** require careful planning, but reuse can significantly **reduce waste and emissions** when implemented at the right scale.

SCAN ME!

Learn more about this project

Reusing medical device components could cut waste by 92% and reduce $CO_2$ emissions.



2

# Platform for Circular Furniture Business

Company
**Studio Belize GmbH**

Country
**Germany**

Circular Business Model
**Circular product design**

Sector
**Retail**

## Modular Furniture with a Circular Supply Chain

### Challenge

- Linear furniture production with **long global supply chains**
- **High $CO_2$ emissions** from transport and storage
- **Overproduction** and no repair or reuse options

### Solution

- Developed a **modular shelving system** from reclaimed rubberwood
- Introduced **on-demand production** through an online configurator
- Established the basis for regional EU manufacturing and **repairable design**

### Impact

- Material-related **$CO_2$ emissions reduced** from ~70% to ~35%
- **Lower material costs** through reclaimed rubberwood
- **Eliminated overproduction** & **unnecessary storage** with on-demand manufacturing
- Supported local jobs and **shorter supply chains**

### Key takeaway

**Modular design**, reclaimed materials, and on-demand production can make **furniture more circular and resource-efficient**.

SCAN ME!

Learn more about this project

A modular, on-demand furniture model reduced emissions, avoided overproduction, and strengthened local manufacturing.

3



# One Chair (NatChair)

Company
**Athanasios Babalis Design Studio**

Country
**Greece**

Circular Business Model
**Circular product design**

Sector
**Creative & Cultural Industries**

## One Chair for a Lifetime

### Challenge

- Chairs are **often replaced** as users grow or needs change
- Existing adjustable chairs are mainly for children and have **limited lifespans**
- **Lack of** repairable, long-life **solid wood seating**

### Solution

- Designed one **adjustable chair for ages 5 to 85+**
- Adjustable seat, backrest and footrest
- **40+ year target lifespan** with **replaceable parts**
- **Tested with 120+ users** and developed two prototypes

### Impact

- Up to **87% less wood and metal used** over 40 years
- Projected **€1.97M revenue** over 5 years
- **10-year warranty** supports long product life
- Inclusive **design tested across children, adults and seniors**

### Key takeaway

One **adaptable, repairable chair** can replace decades of conventional furniture purchases.

SCAN ME!

Learn more about this project

A long-life adjustable chair reduces material use while adapting to users from childhood to old age.

4



# Circular Growing Pots

Company
**MoraviaLab s.r.o**

Country
**Chechia**

Circular Business Model
**Circular product design**

Sector
**Agri-food**

## Durable Pots for Circular Microgreen Farming

### Challenge

- Growing pots were treated as consumables and created **plastic waste**
- Pots needed to withstand 100+ growing cycles in high humidity
- 3D-printed pots cost around €3/unit and were **difficult to scale**

### Solution

- Replaced compostable materials with **durable, recyclable PP and PET-G**
- **Validated pots for 100 cycles** with no visible damage
- Switched from 3D printing to **moulded production**
- Designed pots to be **food-safe**, dishwasher-safe and **recyclable**

### Impact

- **100+ growing cycles** achieved per pot
- **Unit cost reduced** from €3 to €0.60–€0.80
- **€300+ saved** per 120-pot growing system
- **Reduced** replacement waste and **material consumption**
- Pots can be **recycled at end of life**

### Key takeaway

**Durable, recyclable materials** proved more **circular and cost-effective** than compostable alternatives for reusable growing pots.

SCAN ME!
Learn more about this project

Redesigned growing pots cut costs by up to 80% while meeting a 100-cycle durability target.

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# RePanel

Company
**HALM GmbH**

Country
**Germany**

Circular Business Model
**Circular product design**

Sector
**Construction**

## Circular Straw Panels for Sustainable Building Renovation

### Challenge

- Building systems contained **hard-to-recycle plastics**, metals, and adhesives
- Needed more circular, **low-carbon renovation solutions**
- Long-distance straw transport **increased emissions and costs**

### Solution

- **Redesigned prefabricated panels** using straw, timber, and clay
- **Replaced plastic tapes with sheep's wool** and synthetic ties with sisal
- Introduced **reusable wooden connectors** and **easier disassembly**
- Developed **slimmer SB24 panels** for building renovations

### Impact

- Up to 4.79 kg **$CO_2e$/m²** **emissions avoided**
- **70–80% of bio-based materials recoverable** at end of life
- **65% lower joint costs**
- **Straw transport reduced** from ~950 km to under 50 km
- **3** commercial renovation pilot **projects completed** or underway

### Key takeaway

**Circular building design** can combine carbon storage, **easier material recovery** and **lower construction costs**.

SCAN ME!

Learn more about this project

Bio-based building panels were redesigned to improve material recovery, reduce emissions, and lower construction costs.

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# Up2BioPUR

Company
**INDRESMAT S.L.**

Country
**Spain**

Circular Business Model
**Circular product design**

Sector
**Construction**

## Turning Polyurethane Circular with Recycled Foams

### Challenge

- Polyurethane depended on **virgin fossil materials**
- Recycled polyols had **inconsistent quality** and low availability
- Needed **affordable recycled alternatives** without losing performance

### Solution

- Integrated **chemically recycled polyls** into bioPUR foams
- Achieved **up to 42% recycled content**
- Maintained **foam quality** and technical performance
- Created roadmap for **industrial scale-up**

### Impact

- Reduced use of **virgin fossil raw materials**
- **~23.5% less $CO_2$** emissions
- **15+ stakeholders** engaged across the value chain
- **€100,000** potential **savings** in 2 years

### Key takeaway

High performance polyurethane foams can include **over 40% recycled content** while **cutting emissions and costs.**

SCAN ME!

Learn more about this project

A circular solution for construction materials that benefits the environment and the economy.



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# REMUIRESTA

Company
**PRIME Laser Technology S.A.**

Country
**Greece**

Circular Business Model
**Circular product design**

Sector
**Renewable Energy**

## Less Material, Lower Costs for Solar Thermal Systems

### Challenge

- Copper and aluminium make up up to 80% of **production costs**
- **High virgin material use** and commodity price volatility
- **Need to reduce materials** without compromising performance

### Solution

- Redesigned absorber panels to **use less copper and aluminium**
- Optimised laser welding to **reduce energy use**
- Expanded scrap recovery and **B2B return loops**

### Impact

- **34.7% less copper** per absorber
- **25% less aluminium** per unit
- **24%+ lower material costs**
- **CapEx payback** in under 10 production days
- **10–15% lower** absorber **costs**

### Key takeaway

Smart **eco-design** reduced material use and costs while maintaining high-performance **solar thermal production.**

SCAN ME!

Learn more about this project

Eco-design cut copper and aluminium use by up to 35% while reducing production costs by more than 24%.

8



# CIRCLTR

Company
**The Vegan Goodlife GmbH**

Country
**Germany**

Circular Business Model
**Circular product design**

Sector
**Textiles**

## Circular Design Reinvents Luxury Leather Goods

### Challenge

- Leather goods production uses **high amounts of energy, water, and chemicals**
- **Limited end-of-life options** beyond landfill or incineration
- Products often generate **material waste** and are difficult to repair

### Solution

- Replaced conventional materials with **95–100% biobased vegan alternatives**
- **Digitalised production** and introduced laser cutting technology
- Redesigned products with **modular, replaceable components** for repairability
- Promoted circular design through industry and **university collaboration**

### Impact

- **Material waste reduced** to less than 5%
- **Cutting precision** improved by **60%**
- Enabled future **on-demand production models**
- Hired **2 new craftswomen** and delivered **circularity training**

### Key takeaway

Luxury accessories can combine **circular design, biobased materials**, and **repairability** without compromising quality.

SCAN ME!

Learn more about this project

Biobased materials, digital production, and repairable design reduced waste and brought circularity to luxury accessories.



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# Seafoam

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Company
**Revoltech**

Country
**Germany**

Circular Business Model
**Circular product design**

Sector
**Textiles**

## A Circular Alternative to Leather

### Challenge

- Leather production causes **high emissions** and **chemical pollution**
- Synthetic leather is **petroleum-based and hard to recycle**
- Need for a recyclable, biodegradable **leather alternative**

### Solution

- Developed Seafoam, an **algae-based surface material**
- Made from **natural ingredients** with no toxic chemicals or petroleum
- Designed to be **recyclable, biodegradable**, and glue-free
- **Scaled production** from laboratory to industrial level

### Impact

- **96% lower $CO_2e$** than genuine leather
- **Reduced water** and **energy consumption**
- **Recycled and reused** production **scraps** internally
- Achieved **industrial-scale production** capability

### Key takeaway

**Natural, algae-based materials** can **replace leather** with far lower environmental impact while remaining suitable for industrial production.

SCAN ME!

Learn more about this project

Algae-based Seafoam was developed as a biodegradable, petroleum-free leather alternative with 96% lower $CO_2e$ emissions.

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Up2Circ

Funded by the European Union

# ReLight

Company
**KINOTEHNIK**

Country
**Estonia**

Circular Business Model
**Circular product design**

Sector
**Electronics**

## Upcycling LED Lighting Through Routine Maintenance

### Challenge

- **Short product lifecycles** for professional LED lighting fixtures
- **High logistics** and **refurbishment costs** for upcycling
- **Low customer** and **distributor interest** in upcycled products

### Solution

- **Integrated upcycling** into routine maintenance instead of a separate program
- **Reused 75%** of **mechanical parts** and **100%** of **electronic components**
- Introduced **local refurbishment** through distributors

### Impact

- **25% reduction in $CO_2$ emissions** per lighting fixture
- **Lower logistics** and **refurbishment costs**
- Created a **scalable** maintenance-based **upcycling model**
- **Increased awareness** of circular solutions in the lighting industry

### Key takeaway

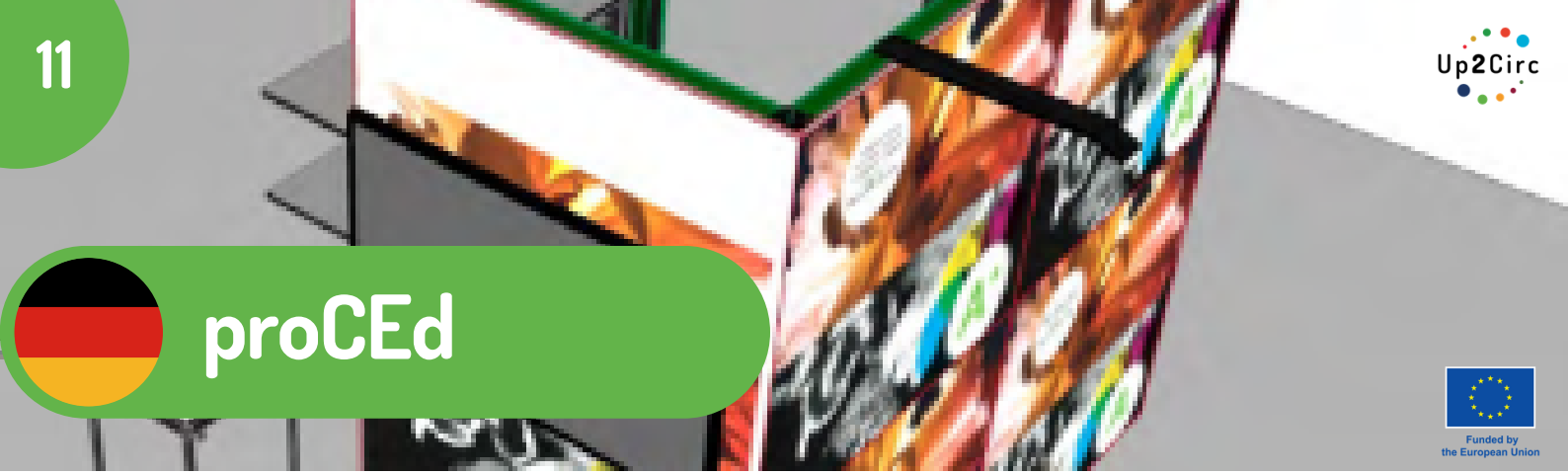
**Integrating upcycling** into routine servicing makes **circular product design more practical and scalable.**

SCAN ME!

Learn more about this project

Routine servicing was transformed into a circular process that extends product life while reducing emissions and costs.

11



# proCEd

Company
**siebold/hamburg messebau GmbH**

Country
**Germany**

Circular Business Model
**Circular product design**

Sector
**Construction**

# Circular and Zero-Emission Trade Show Booths

## Challenge

- Trade show booths generated **high waste and emissions**
- Temporary installations relied on **single-use materials**
- Complex logistics and global transport **increased environmental impact**
- Need for **more reusable** and circular booth designs

## Solution

- Designed a **circular, zero-emission exhibition booth** prototype
- Created a **catalogue of sustainable construction materials**
- Increased reuse of furniture and **modular booth elements**
- Introduced **rental options** and circular design guidelines
- **Minimised waste**, weight, and transport requirements

## Impact

- **90% reduction** in **$CO_2$** emissions
- **94% reduction** in **waste**
- Only **4.6% single-use materials** in the new booth design
- New circular exhibition booth offering launched

## Key takeaway

Circular design principles can dramatically **reduce the environmental footprint** of **temporary exhibition spaces**.

SCAN ME!

Learn more about this project

A redesigned exhibition booth reduced emissions by 90% and cut waste by 94% through reusable materials and circular design.



# XFUN circular feasibility

Company
**XTRAMARINE**

Country
**France**

Circular Business Model
**Circular product design**

Sector
**Mobility, Transport & Automotive**

## From Boat Sales to Circular Mobility Services

### Challenge

- Needed to assess **circular options for electric inflatable boat** "XFUN"
- Intended to develop complex product with multiple circular design and **lifecycle choices**
- Required **clear priorities** for product, production, and business model
- Needed validation for **shift from linear to circular model**

### Solution

- Evaluated **circular design** and **product lifecycle improvements**
- Identified **13 environmental improvement** opportunities
- Developed a **rental-based product-as-a-service model**
- Validated **technical** and **financial feasibility**

### Impact

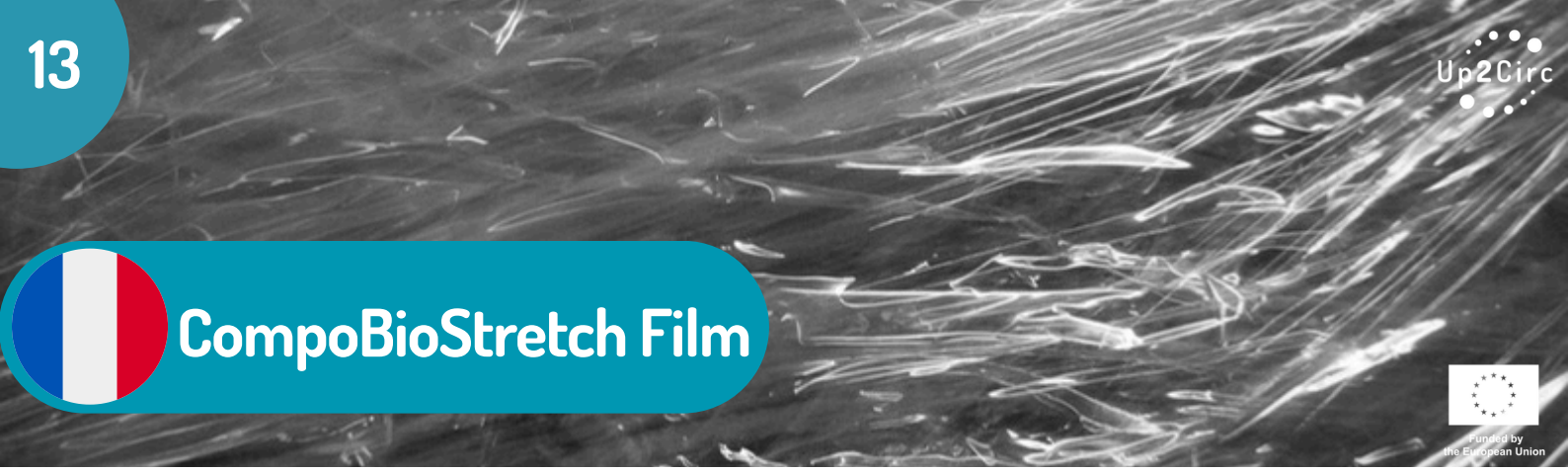
- **Product improvements** integrated into production
- **Positive feedback** from potential **customers**
- New **recurring-revenue** business model developed
- **Environmental** and **economic benefits** assessed

### Key takeaway

A feasibility study enabled a **shift from a linear boat sales model to a circular rental system** supported by **eco-design** and validated business potential.

SCAN ME!
Learn more about this project

The electric boat concept was redefined into a circular rental model supported by eco-design analysis and validated business and environmental potential.



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# CompoBioStretch Film

Company
**Green Business and Consulting Company (GBCC)**

Country
**France**

Circular Business Model
**Circular supply chain**

Sector
**Retail**

## Closing the Loop on Compostable Stretch Film

### Challenge

- Production of compostable stretch film generated **over 25% waste**
- Manufacturing scraps could not be recycled through **conventional processes**
- **Need to reduce waste** and reintegrate recycled material into production

### Solution

- Recycled production scraps into **Recy-CBSF granules**
- Reintroduced recycled content into **new stretch film production**
- Validated performance without significant loss of quality
- Confirmed **environmental benefits** through LCA analysis

### Impact

- **95%** of **production waste recovered** as secondary raw material
- **14% reduction** in **virgin material** use
- **15% less waste** sent for disposal or external recycling
- **10% lower environmental impact** with recycled content

### Key takeaway

**Production waste** can be successfully **reintegrated into compostable film manufacturing**, reducing both resource use and environmental impact.

SCAN ME!

Learn more about this project

Recycling production scraps reduced virgin material use and turned 95% of manufacturing waste into new raw material.



Up2Circ

# SCMP

Funded by the European Union

Company
**PROSERVATION GmbH**

Country
**Germany**

Circular Business Model
**Circular supply chain**

Sector
**Retail**

## Making Compostable Packaging More Circular

### Challenge

- Conventional cushioning materials are often **non-biodegradable**
- RECOU packaging uses molds that had **limited lifespan** and **poor recyclability**
- Need for durable, low-impact mold materials

### Solution

- Tested and validated **alternative materials** for packaging molds
- Selected **more durable** and reusable mold solutions
- Improved mold performance while supporting **compostable packaging production**
- RECOU packaging remains **fully biodegradable** and **compostable**

### Impact

**Mold lifespan increased** from 50–100 cycles to 1,000 cycles

**90% reduction** in mold **material consumption**

Fewer mold replacements, raw material deliveries, and **production emissions**

Improved process stability and **scalability** for future growth

### Key takeaway

**More durable mold materials** can significantly reduce resource use while supporting **compostable packaging production.**

SCAN ME!

Learn more about this project

A tenfold increase in mold lifespan reduced material use by 90% and improved the sustainability of biodegradable packaging production.

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# Grape Leather Alternative



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Company
**Planet of the grapes**

Country
**France**

Circular Business Model
**Circular supply chain**

Sector
**Cultural & Creative Industries**

## Turning Grape Waste into Circular Fashion Materials

### Challenge

- Fashion relies on **animal leather** and **petroleum-based materials**
- Needed scalable, lower-impact **biomaterial alternatives**
- **Required industrialisation** and improved lifecycle performance

### Solution

- Turned grape marc waste into **biomaterials for fashion**
- Developed material with **50% grape marc content**
- **Expanded collection network** to 4 winemakers
- **Improved** collection, transport, and **production processes**

### Impact

- **Reduced water use** from 17,128L to under 8L per bag
- **Lowered emissions** from 80 to 9 kg $CO_2$eq/m²
- **Reduced transport emissions** with local sourcing
- **Strengthened local partnerships** and transparency

### Key takeaway

**Agricultural waste** can **replace high-impact fashion materials** while drastically cutting water use and emissions.

SCAN ME!

Learn more about this project

A bio-based fashion material solution that converts grape waste into low-impact alternatives to leather and petroleum-based textiles.



# WasteNot AgroMarket

Company
**Defood**

Country
**Poland**

Circular Business Model
**Circular supply chain**

Sector
**Agri-food**

## A Digital Marketplace for Surplus Food

### Challenge

- **Surplus and second-grade products** often **goes to waste**
- **No efficient** digital **marketplace** for quality returns
- **Poor matching** between producers and buyers

### Solution

- Developed a **digital B2B marketplace** for surplus produce
- **Connected producers with processors** and buyers in real time
- Added defect filters, urgent **"Hot Sale" listings**, and **logistics coordination**

### Impact

- **80% reduction** in **quality returns**
- 0.82 kg $CO_2$/t **reduction in transport emissions**
- **Platform monetization potential**: 46,000+ EUR projected monthly
- **Improved market access** for small producers

### Key takeaway

**Digital marketplaces** can extend the life of agricultural products while **reducing food waste and creating new value.**

SCAN ME!

Learn more about this project

A digital platform connected surplus agricultural products with new buyers, reducing waste and creating new revenue opportunities.

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# CIRC-FOOD

Company
**ATT Impresa Sociale**

Country
**Italy**

Circular Business Model
**Circular supply chain**

Sector
**Agri-food**

## Inclusive and Circular Catering Services

### Challenge

- **Reduce catering's environmental impact** while supporting inclusive employment
- **Improve delivery** and packaging sustainability
- **Ensure financial viability** and year-round operations

### Solution

- Developed a **circular catering business plan**
- Assessed **cargo-bike deliveries** and **sustainable packaging**
- Explored catering beyond the school calendar
- Evaluated scalability and **financial viability**

### Impact

- **20** educational **institutions assessed**
- **~70 active collaborators** involved
- **100%** of planned **deliverables completed**
- **Expansion potential** identified in Lombardy and Emilia-Romagna

### Key takeaway

**Circular catering** can combine inclusive employment with **lower-impact logistics** and packaging through a **scalable business model**.

SCAN ME!

Learn more about this project

A business plan mapped out how sustainable deliveries, responsible packaging, and inclusive employment could support catering growth.



# Bio-Circ Substrates

Company
**MycoLutions**

Country
**Germany**

Circular Business Model
**Circular supply chain**

Sector
**Construction**

## Agricultural Waste for Circular Mycelium Insulation

### Challenge

- Wheat-based supplements competed with food production
- **High material costs** weakened supply chain circularity
- Needed sustainable, **locally sourced alternatives**

### Solution

- Tested agricultural residues: mushroom substrate, brewer's grain, and apple pomace
- Selected **spent mushroom substrate (SMS)** as the best-performing option
- Developed a **locally sourced, residue-based formulation**

### Impact

- **13% reduction** in **substrate material costs**
- **5.3 tonnes of agricultural waste reused** at pilot scale
- **Potential to reuse 53 tonnes/year** at demonstration scale
- Supported **regional suppliers** and **sustainable construction**

### Key takeaway

**Local agricultural waste** can **replace virgin inputs in mycelium products**, improving circularity while reducing costs.

SCAN ME!
Learn more about this project

Agricultural waste replaced wheat-based supplements, reducing substrate costs by 13% and enabling large-scale reuse of local residues




# Rethinking Utilisation

Company
**RURALIS SRL SB**

Country
**Italy**

Circular Business Model
**Sharing Economy**

Sector
**Proximity & Social economy**

## Building Circularity into Rural Hospitality

### Challenge

- Applying circularity across a **fragmented rural hospitality** network
- **Limited control** over properties, products, and supply chains
- **Need for local**, service-based **circular solutions**

### Solution

- Created **tailored waste management** and composting plans
- Established **local repair networks** with artisans
- Introduced maintenance and **furniture regeneration** protocols
- **Trained owners** and **staff in circular practices**

### Impact

- **20–25% less waste** per property
- **~20% lower $CO_2$ emissions** through longer asset lifespans
- **15% savings** in annual replacement costs
- **100% participation** across **10 properties**
- **40% increase** in environmental **awareness**

### Key takeaway

Local partnerships, maintenance, and training can make **circularity work across decentralised rural hospitality**.

SCAN ME!
Learn more about this project

Local repair, composting, and training helped rural properties reduce waste and costs while strengthening community value.



Up2Circ

# Back to New(s)

Funded by the European Union

Company **Embawo**

Country **Italy**

Circular Business Model **Product life extension**

Sector **Textiles**

## Extending the Life of Handcrafted Handbags

### Challenge

- **High use of virgin materials** and production waste
- **Repair services** were **underused** and unstructured
- **No system for material recovery** or product take-back

### Solution

- Developed a **Circular Hub for repair, regeneration, and co-design**
- **Recovered materials from used handbags** for new products
- Introduced a **return-and-voucher scheme**
- Combined craftsmanship with **digital production** tools

### Impact

- Up to **20% less virgin material** used in 3 years
- Up to **80% reduction** in **production waste**
- **14.5 kg $CO_2$ saved** per **regenerated handbag**
- **1.3–2.0 t $CO_2$ saved annually** during the pilot
- Created **new jobs** and **revenue** from regenerated products

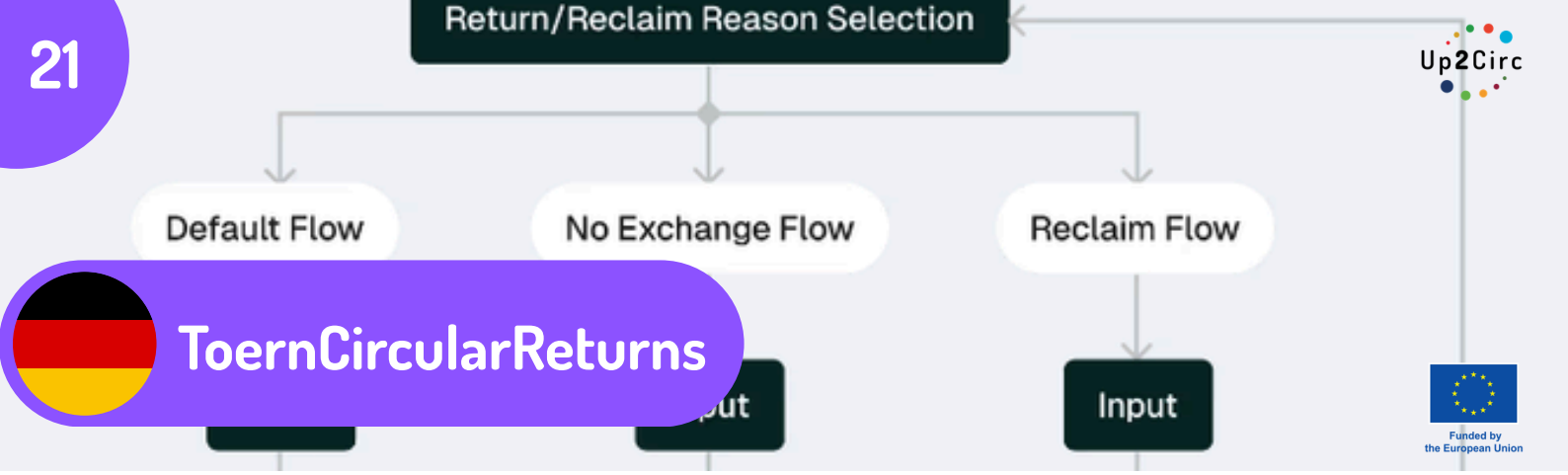
### Key takeaway

**Repair, regeneration,** and **co-design** can **extend product life** while reducing waste and creating new business opportunities.

SCAN ME!

Learn more about this project

A circular hub combines repair, material recovery, and co-design to reduce waste and create longer-lasting fashion products.




# ToernCircularReturns

Company
**toern GmbH**

Country
**Germany**

Circular Business Model
**Product life extension**

Sector
**Digital, Retail**

## AI-Powered Circular Returns for Home & Living

### Challenge

- **Returns cost** up to €20 each
- **~1.8 kg $CO_2$ generated per return**
- **High waste** from shipping and packaging
- **Bulky furniture** returns are **hard to process**

### Solution

- Used AI for **digital inspection** at customer homes
- Forwarded reusable items directly to next users
- **Reduced** unnecessary **transport** and **storage**
- **Developed SmartKeep** defect-handling workflow

### Impact

- **AI inspection** validated for large furniture tems
- **Lower return**, storage, and **support costs**
- **Reduce packaging waste** and **$CO_2$** emissions
- **Improved** customer experience and **transparency**

### Key takeaway

AI-based digital inspections can **reduce costs, waste, and emissions in Home & Living e-commerce returns.**

SCAN ME!

Learn more about this project

An AI-driven returns solution that reduces waste, transport emissions, and costs by enabling smarter reuse and resale of home and living products.




# PiFresc®

Company
**Agreenet**

Country
**Italy**

Circular Business Model
**Product life extension**

Sector
**Agri-food**

## Extending Fresh Produce Shelf Life Naturally

### Challenge

- Fresh produce loses 5–10% to spoilage
- **Shelf life is limited**, especially in long-distance transport
- **Existing preservation** methods are **costly** or complex

### Solution

- Developed PiFresc®, a **plant-based shelf-life extender**
- Placed directly **inside existing packaging**
- Slows fungal and bacterial growth without infrastructure changes
- Supports a **scalable**, service-oriented adoption **model**

### Impact

- 10–12% **less food waste**
- **~50 t $CO_2$/year avoided** (medium-scale scenario)
- Up to **25–30% longer shelf life**
- ~4.5 kWh/year/m³ **energy savings**
- Fewer rejected shipments and better inventory management

### Key takeaway

**Extending shelf life** with simple, **plant-based technology** can reduce waste and improve efficiency across the fresh food supply chain.

SCAN ME!
Learn more about this project

A plant-based device extended fruit and vegetable shelf life by up to 30%, reducing food waste, energy use, and emissions.




Up2Circ

Funded by the European Union

# TMONaaS

Company
**Tsenso GmbH**

Country
**Germany**

Circular Business Model
**Product life extension**

Sector
**Digital, Agri-food**

## Giving Temperature Sensors a Second Life

### Challenge

- Thousands of battery-powered temperature sensors were **discarded after a single use**
- Fully functional devices generated **unnecessary electronic waste**
- **Low return rates** limited opportunities for reuse

### Solution

- Tested a **product-as-a-service model** for temperature monitoring
- Introduced **sensor return boxes** in warehouses
- **Explored incentives** to improve sensor collection and reuse
- Refurbished and reissued returned devices

### Impact

- 49 out of 50 test sensors were returned fully operational **(98% return rate)**
- Sensors can be **reused for up to 10 cycles**
- **Lowered cost** per device use and improved pricing competitiveness
- Demonstrated **strong customer support** for sensor return schemes

### Key takeaway

Simple **return systems** can significantly extend product life and **reduce electronic waste.**

SCAN ME!

Learn more about this project

A simple return-and-reuse system achieved a 98% sensor recovery rate, reducing e-waste and extending product lifespans.



# Felfil as a service

Company
**FELFIL SRL**

Country
**Italy**

Circular Business Model
**Product as a service**

Sector
**Digital**

## Reducing plastic waste in 3D printing

### Challenge

- **High cost of recycling** machines for private users
- Complex logistics for sharing equipment
- **No accessible rental model** for 3D recycling systems
- **High plastic waste** from 3D printing

### Solution

- Launched **Felfil as a Service (FaaS)** rental model
- Validated demand through user surveys
- Improved durability and **reusable packaging**
- Built website and rental agreement

### Impact

- **60 users/year** via 5 shared units
- Up to **15 kg plastic recycled** per 15-day rental
- **90% reduction** in new machine production
- **~42 kg $CO_2$/year** per unit lifecycle

### Key takeaway

**A service-based** circular model can make recycling **tech accessible, scalable, and environmentally impactful**.

SCAN ME!
Learn more about this project

A rental-based recycling service that makes 3D printing more circular by turning plastic waste into reusable filament in an affordable and accessible way.

Up2Circ

# ERHYME

Material Layer Membrane Platinum Gas Diffusion Layer Sealing Material

Funded by the European Union

Company
**ELEMENTARHY GMBH**

Country
**Germany**

Circular Business Model
**Product as a service**

Sector
**Renewable Energy**

## Closing the Loop on Green Hydrogen Components

### Challenge

- Green hydrogen production relies on scarce and **expensive iridium**
- MEAs are difficult to recycle and often **burned at end of life**
- **Dependence on critical raw materials** creates supply risks and **high costs**

### Solution

- Developed **low-iridium MEA technology** (<0.1 mg Ir/cm²)
- Introduced an **MEA-as-a-Service model** with take-back, refurbishment, and recycling
- **Reused components** and recovered valuable materials at end of life
- Extended MEA lifespan through **remanufacturing and reuse**

### Impact

- **Reduced dependence on critical raw materials** such as iridium
- **Recovery rates** higher than current industry practice (~20%)
- **Lower material costs** through reuse and recycling
- **Reduced waste** and improved **resource efficiency**

### Key takeaway

A service-based approach can make **hydrogen technologies more circular**, affordable, and **resource-efficient.**

SCAN ME!

Learn more about this project

A circular service model extends the life of electrolyzer components while reducing critical material use and waste.




# NANDO

Company
**RE-LEARN**

Country
**Italy**

Circular Business Model
**Product as a service**

Sector
**Digital**

## AI-Powered Smart Waste Collection

### Challenge

- Waste collection relied on fixed routes and **manual monitoring**
- Contamination was detected too late, causing **rejected recycling loads**
- Unnecessary trips **increased costs, fuel use,** and **$CO_2$ emissions**
- Municipalities **lacked real-time visibility** on waste quality and volumes

### Solution

- Developed NANDO.Sentinel, an **AI computer-vision system** on collection trucks
- **Monitored waste quality**, quantity, and illegal dumping in real time
- **Optimised routes** using fill levels, vehicle capacity, and historical data
- **Centralised all data** in a dashboard and enabled future PAYT pricing models

### Impact

- **Reduced** kilometers traveled, **fuel consumption**, and **$CO_2$ emissions**
- **Increased recycling rates** through targeted interventions
- **Improved urban cleanliness** by detecting illegal dumping
- Enabled **data-driven planning** and environmental reporting

### Key takeaway

**Real-time waste data** can improve recycling quality, reduce costs, and make urban **waste collection more efficient.**

SCAN ME!

Learn more about this project

AI-equipped collection trucks provide real-time waste data, helping cities optimize routes, improve recycling, and reduce emissions.

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# Chromapowder

Company
**BIM TRADING LTD**

Country
**Cyprus**

Circular Business Model
**Product as a service**

Sector
**Construction**

## Circular Paint Recovery for the Construction Sector

### Challenge

- **Paint** and **packaging waste** were **landfilled** or incinerated
- Cyprus depended on **imported pigments** and raw materials
- **Valuable materials** like $TiO_2$ were **lost** after use
- Construction sector followed a linear **"dispose-and-replace" model**

### Solution

- Developed a circular **"Paint-as-a-Service Lite"** model
- **Collected leftover paint** and empty buckets from contractors
- **Recovered pigments** through filtration, spray drying, and jet milling
- Reused HDPE buckets through **multiple reuse cycles**

### Impact

- **1,206 kg/year** of paint and packaging **waste diverted**
- **~3,300 kg $CO_2e$/year emissions avoided**
- **77% carbon reduction** potential from bucket reuse
- **Savings** per reused buckets

### Key takeaway

**Recovered paint residues** and reusable packaging can create a **profitable circular supply chain** while reducing waste and import dependency.

SCAN ME!
Learn more about this project

Leftover paint and packaging were recovered into reusable materials, reducing waste, emissions, and dependence on imported resources.

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# ircular Workwear

Designed to be recycled



Up2Circ

## Caas jobwear

100% Made in Europe

Zero Waste

>95% recyclable

Funded by the European Union

Company **PROUDD**

Country **Belgium**

Circular Business Model **Product as a service**

Sector **Textiles**

# Traceable Circular Workwear as a Service

## Challenge

- **80% of workwear reaches landfill** within 18 months
- Garments are **rarely designed for recycling** or **reuse**
- **Lack of tracking** makes take-back and impact measurement difficult
- New **EU textile rules** increase the need for traceability

## Solution

- Circular workwear made from **recycled cotton and polyester**
- **95%+ recyclable design** with fibre-to-fibre recycling
- **Digital product passports** track each garment's lifecycle
- Repair, collection and recycling provided as **one service**

## Impact

- **90%+ of fibres recovered**
- Repair and collection models **extend garment lifetimes**
- **100% European production** and traceable supply chains
- Socially inclusive **partners support repair** and end-of-life services

## Key takeaway

**Traceability** connects design, use, recovery and recycling into one measurable **circular service.**

SCAN ME!

Learn more about this project

Digital tracking and circular design enable workwear to stay in use longer and return to textile-to-textile recycling.



# W2P Loop

Company
**OCEAN MATERIAL**

Country
**Germany**

Circular Business Model
**Product as a service**

Sector
**Mobility, Transport & Automotive**

## Closing the Loop on Logistics Pallets

### Challenge

- Wooden pallets have **short lifespans** and **high environmental impact**
- Large volumes of mixed and low-value **plastic waste** remain **unrecycled**
- **Lack of effective systems** to recover and reuse logistics pallets

### Solution

- Developed pallets made from recycled and marine plastic waste
- Created a **recycling process** for complex plastic streams
- Designed a **closed-loop return system** for pallet recovery and reuse
- Combined **material tracking**, logistics, and environmental data in one platform

### Impact

- Potential to save **20,000 t of $CO_2$**/year vs. wooden pallets
- Diverts or **recycles 8,000 tonnes** of waste annually
- Estimated 30% **improvement in energy efficiency** through return logistics
- Longer-lasting and lighter pallets **reduce transport impacts**

### Key takeaway

Low-value plastic waste can be transformed into **durable logistics products** through circular design and reverse logistics systems.

SCAN ME!

Learn more about this project

Recycled plastic waste was converted into durable pallets, cutting emissions and keeping thousands of tonnes of material in circulation.

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# JG Vending Machines

Company
**JG Group sp. z o.o.**

Country
**Poland**

Circular Business Model
**Product as a service**

Sector
**Energy Intensive Industries**

## Closing the Loop: CNC Tools Go Circular

### Challenge

- **Create competitive CNC vending machines** for tool return and recovery
- Enable closed-loop system for tool reuse and **rare earth recovery**
- **Drive adoption** of circular solutions in a **traditional industry**

### Solution

- Built vending machines for **tool return, repair, and recycling**
- Integrated **remanufacturing** and **wear assessment features**
- Used product-as-a-service **(sale/rental) model**
- Focused on cost-competitive, circular design

### Impact

- **20% reduction** in **material use**
- **More tool reuse** through return system (5,000 monthly)
- **Higher awareness** of circular economy in CNC sector
- **Savings** in **packaging costs**

### Key takeaway

A service-based **vending machine model enables circular flows** in industry while reducing costs and material use.

SCAN ME!

Learn more about this project

A circular vending system that enables the return, reuse, repair, and recycling of CNC tools while reducing material consumption and industrial waste.

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# AGRO-BLOCK

Company
**Pedone Working srl**

Country
**Italy**

Circular Business Model
**Recovery and recycling**

Sector
**Construction**

## Agricultural Residues for Circular Construction

### Challenge

- Construction **needs lower-carbon, bio-based materials**
- Agricultural residues like **rice husks and miscanthus remain underused**
- **Dependence on imported raw materials** increases environmental impact

### Solution

- **Developed bio-based building blocks** using hemp, rice husks and miscanthus
- **Used a low-energy process** compatible with existing production lines
- Validated mechanical, thermal, acoustic, durability and fire performance
- **Designed for potential recycling** and **reuse** at end of life

### Impact

- Validated **industrial-scale prototype** production
- **Reduced reliance on virgin** and imported **materials**
- **Strengthened local agricultural** and **construction supply chains**
- Promising thermal and acoustic insulation performance

### Key takeaway

**Local agricultural residues** can become scalable, **high-performance building materials** while reducing reliance on virgin resources.

SCAN ME!

Learn more about this project

Rice husks and miscanthus were successfully incorporated into bio-based building blocks using existing industrial processes.



# KOMVAL

Company
**Komvida Kombucha**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## Turning Kombucha Waste into Circular Biomaterials

### Challenge

- Kombucha production generated SCOBY and **plant waste**
- Needed lower-cost, **circular alternatives** for bacterial cellulose production
- Wanted to **reduce waste** and resource use

### Solution

- Used plant residues as **substrate for bacterial cellulose**
- Reused SCOBY waste as fermentation inoculum
- Implemented **controlled fermentation** and waste valorisation process
- Created **closed-loop production model** from kombucha by-products

### Impact

- **50% waste reduction**
- **23.3% $CO_2$ reduction**
- **20%** improvement in **energy efficiency**
- **Up to 13.3% job creation** increase

### Key takeaway

Kombucha waste can be transformed into **high-value bacterial cellulose**, reducing emissions, waste, and production costs through a circular process.

SCAN ME!

Learn more about this project

Kombucha production waste was transformed into sustainable bacterial cellulose through a circular process.



# Recycling Sicily Cork

Company
**SARCO SRL**

Country
**Italy**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## AI Unlocks the Value of Waste Cork

### Challenge

- Used cork stoppers are mostly landfilled due to **poor sorting technology**
- Natural and synthetic stoppers are **difficult to distinguish**
- Around **15 tonnes/year of cork waste** were sent to landfill

### Solution

- Developed an **AI-powered** optical **sorting system**
- Separated natural cork from mixed waste and synthetic stoppers
- Recovered cork and **transformed** it **into industrial-grade granules**
- Built a modular and **scalable sorting prototype**

### Impact

- **1,786 kg** of **cork recovered**
- **237 kg $CO_2e$ saved**
- **~ €250 saved per tonne diverted** from landfill
- 2 permanent **jobs created**
- **Potential to scale** to other waste treatment facilities

### Key takeaway

AI-based sorting can unlock previously unrecyclable waste streams and create **new material value**.

SCAN ME!

Learn more about this project

AI sorting enabled cork recovery from mixed waste, reducing landfill disposal while creating new material and economic value.




# INFINITIS

Company
**Conify**

Country
**Greece**

Circular Business Model
**Recovery and recycling**

Sector
**Aerospace & Defence**

## Closed-Loop Powder Reuse for Sustainable Metal 3D Printing

### Challenge

- Unused AlSi10Mg powder **increased waste** and **production costs**
- SMEs **lacked** affordable, traceable **powder-reuse methods**
- Needed to **maintain powder quality** and part performance

### Solution

- Developed a **closed-loop powder reuse protocol**
- Recovered, sieved, and reused **powder without adding virgin material**
- **Validated 8** consecutive **LPBF cycles**
- Monitored powder quality and mechanical performance

### Impact

- **84.8% reduction** in **virgin powder use**
- **99.3% reduction** in **powder waste**
- Up to **66% lower $CO_2$ emissions**
- Up to **97% lower energy use** compared with landfilling
- **84.8% reduction** in virgin powder **costs**

### Key takeaway

**Controlled powder reuse** enables more **cost-efficient and sustainable metal 3D printing** without compromising part performance.

SCAN ME!
Learn more about this project

An eight-cycle reuse protocol significantly reduced powder consumption, waste, costs, and environmental impacts in metal 3D printing.

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# Closing The Circle

Company
**PlantaRei Biotech S.r.l.**

Country
**Italy**

Circular Business Model
**Recovery and recycling**

Sector
**Health**

## From Production Waste to Natural Ingredients

### Challenge

- **55–60 tonnes/year of watery production residue** at full capacity
- **Up to €30,000/year** spent on **waste disposal**
- **Valuable vegetable oils** remained **unused**

### Solution

- Developed **solvent-free spray-drying process**
- **Recovered** over **90%** of the **residue**
- Created **natural ingredient for shampoos**, **shower gels**, and fabric **softeners**
- Two companies began testing the ingredient

### Impact

- **~91% reduction** in waste-related **emissions**
- Up to **€30,000/year** in **disposal costs avoided**
- **5–7 tonnes/year** of **new ingredient** produced
- Potential **customer savings** of **1–2.6 tonnes $CO_2e$/year**

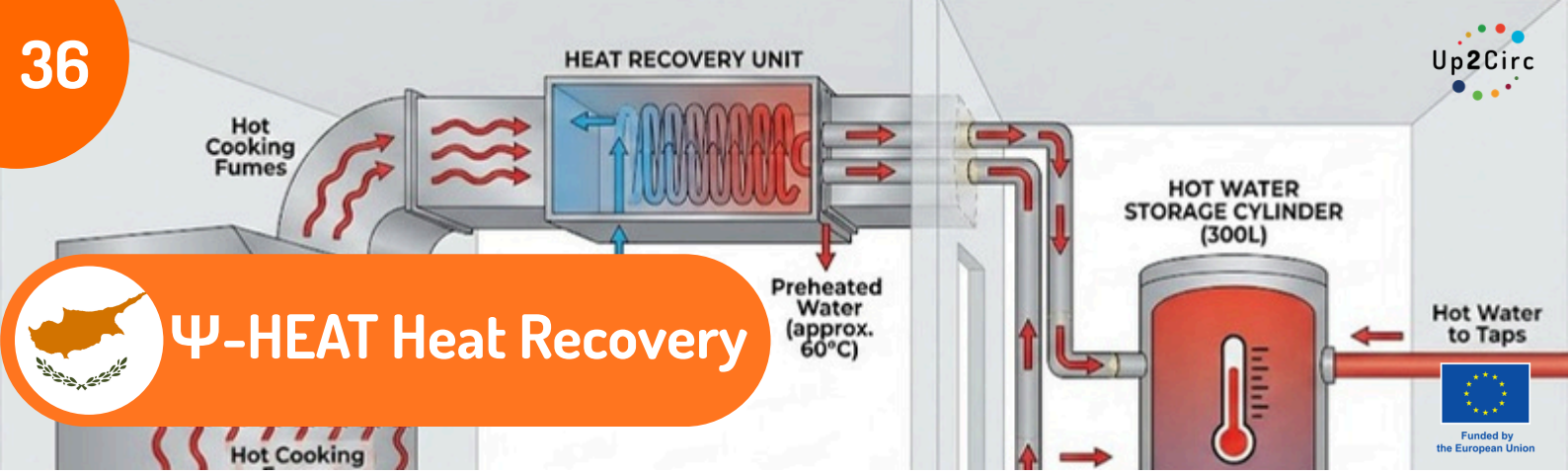
### Key takeaway

A simple, solvent-free process can **transform production residue into a valuable ingredient** while reducing emissions and costs.

SCAN ME!

Learn more about this project

A vegetable-oil-rich residue was transformed into a natural ingredient for personal care and household products.




# Ψ-HEAT Heat Recovery

Company
**Psistaria Ilios Ltd**

Country
**Cyprus**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## Turning Kitchen Waste Heat into Energy Savings

### Challenge

- Burned **13,170 kg LPG annually**
- Vented kitchen **waste heat into the atmosphere**
- Generated **27.6 tonnes $CO_2$/year**
- Faced **high energy costs** and kitchen heat

### Solution

- Installed **waste-heat recovery** to preheat hot water
- Replaced old **appliances** with **energy-efficient** models
- Added **hygiene controls** and maintenance systems
- Prepared a €24,500 **retrofit investment plan**

### Impact

- 24.4% **reduction** in **LPG consumption**
- 6.72 tonnes **less $CO_2$ emitted** annually (~24%)
- **60–80%** of **hot-water** demand **covered** by recovered heat
- **19% reduction** in **energy** intensity
- One **new technical role** created

### Key takeaway

**Recovering kitchen waste heat** and upgrading equipment can significantly **cut energy use, emissions**, and operating costs.

SCAN ME!
Learn more about this project

A restaurant retrofit combines heat recovery and efficient appliances to reduce annual $CO_2$ emissions by around 24%.



Up2Circ

# RE.S.T.O.RE

Funded by the European Union

Company
**A.D.A. S.r.l.**

Country
**Italy**

Circular Business Model
**Recovery and recycling**

Sector
**Health**

## Circular Practices for Sustainable Pharmaceutical R&D

### Challenge

- **High material** and **solvent waste** in pharmaceutical R&D
- Need to **maintain product quality** while **reducing resource use**
- **High carbon footprint** of traditional inhalers

### Solution

- **Recovered** and **reused active ingredients** (APIs) and solvents
- Evaluated **greener solvents** and microfluidics
- Explored dry powder inhalers (DPIs) as a **lower-carbon alternative**
- **75%** of **APIs recovered**

### Impact

- **68%** of **solvents recycled**
- **73% reduction** in synthesis **solvent waste**
- **45 L** of **non-green solvents recovered** or **saved**
- **~96% lower $CO_2$ emissions** potential with DPIs
- €6,730 in material **savings** over six months

### Key takeaway

**Circular practices in pharmaceutical R&D** can significantly reduce waste, emissions, and costs while supporting **more sustainable drug development.**

SCAN ME!

Learn more about this project

Resource recovery and greener inhaler technologies reduced laboratory waste while delivering measurable environmental and economic benefits.




# H SAVES H20

Company
**Care Applications**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Textiles**

## Hydrogen-Powered Circular Textile Dyeing

### Challenge

- **High chemical use** and **wastewater** conductivity in textile dyeing
- Wastewater reuse was difficult and **energy-intensive**
- Need to **improve efficiency** without replacing existing machinery

### Solution

- Integrated hydrogen into existing dyeing equipment
- Replaced most chemical reducing agents
- Added **automated sensors** and process controls
- Enabled **direct wastewater reuse**

### Impact

- **90.5% reduction** in **wastewater** conductivity
- **~85% reduction** in **chemical use**
- **91% reduction** in **energy** consumption
- **Expected 50% turnover** growth over 5 years

### Key takeaway

**Hydrogen technology** upgraded existing textile machinery into a more **efficient and circular dyeing system.**

SCAN ME!

Learn more about this project

The technology cut chemicals, wastewater conductivity, and energy use while maintaining dyeing quality.

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Up2Circ

# Reversing Waste Flow

Funded by the European Union

Company
**Redopapers BV**

Country
**Belgium**

Circular Business Model
**Recovery and recycling**

Sector
**Proximity & Social Economy, Retail**

## From Corporate Paper Waste to Circular Stationery

### Challenge

- High-quality paper waste was **recycled too early**
- Companies **lacked reuse solutions** for branded materials
- Need for scalable and commercially viable reuse model

### Solution

- Turned company paper waste into **branded notepads and planners**
- Surveyed **183 organisations** and piloted with **9 partners**
- Defined reuse criteria and **scalable production model**
- Combined machine processing with social enterprise assembly

### Impact

- **1,535 kg paper reused**
- **38,375 L water saved**
- **2,624.85 kg $CO_2$ avoided**
- **2–3 FTEs** engaged in **social work** enterprises

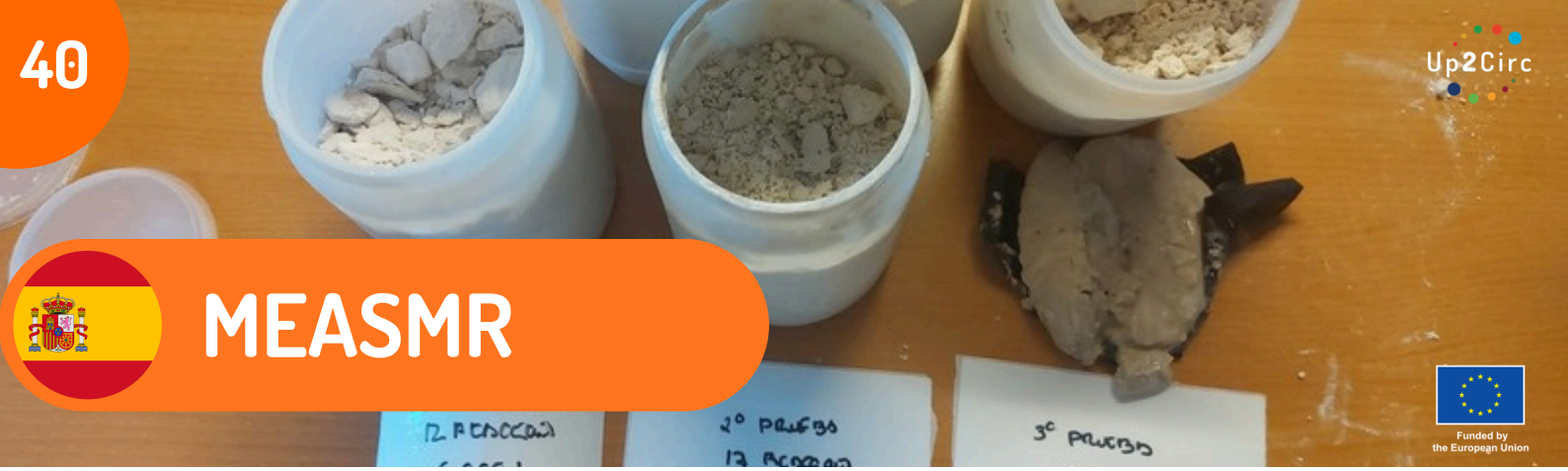
### Key takeaway

Reusing company paper waste can create **scalable circular products** with measurable **environmental, economic, and social value.**.

SCAN ME!

Learn more about this project

A circular stationery model that gives corporate paper waste a second life through locally produced branded notebooks and planners.



# MEASMR

Company
**DIMENSA, DAMIÁN DÍAZ SÁNCHEZ, S.L.**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## Achieving Zero Waste in Aluminium Sulphate Production

### Challenge

- Aluminium sulphate production generated **waste sent to landfill**
- **Need to reduce waste** generation
- Improve **raw material efficiency**

### Solution

- Identified process improvements to **reduce waste formation**
- **Reused manufacturing waste** as a raw material in production
- **Improved reuse efficiency** through a simple washing pre-treatment

### Impact

- **60% reduction** in **manufacturing waste**
- **Verified 100% reuse** of generated waste within the process
- Achieved a **zero-waste** scenario with **no need for external waste disposal**
- **Maintained product quality** and process stability

### Key takeaway

**Industrial waste** can be fully **reintegrated into production, reducing landfill disposal** and improving process efficiency.

SCAN ME!
Learn more about this project

Process improvements cut waste by 60% and enabled 100% reuse of manufacturing residues.



# Double-Up

Company
**PLASTIZ**

Country
**Italy**

Circular Business Model
**Recovery and recycling**

Sector
**Creative & Cultural Industries**

## Circular Design Panels from Recycled Plastic Waste

### Challenge

- Massive global **plastic waste** with low recycling rates
- Furniture industry depended on **non-renewable materials**
- Needed scalable uses for post-consumer plastic waste

### Solution

- Converted plastic waste into **durable design panels**
- Used thermoforming process for **large-format recycled materials**
- Embedded ~15 kg of plastic waste per m² of panels
- Developed custom machinery for **circular plastic processing**

### Impact

- **20,000+ kg plastic waste recycled** in 3 years
- **35,000 kg petrol saved**
- **50% lower greenhouse gas emissions** vs virgin plastic
- **Used** in 27 **retail spaces**, 2 **exhibitions**, and 1 **office**

### Key takeaway

Plastic waste can be transformed into **durable design materials with lower emissions and high-value applications** in architecture and furniture.

SCAN ME!

Learn more about this project

Recycled plastic waste was repurposed into large-format materials used in retail, hospitality, and interior design projects.




# ATOM

Company
**UALOH**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Retail**

## Circular Modular Furniture System for Reuse and Repair

### Challenge

- Furniture industry depends on **virgin plastic** and **generates waste**
- Short product lifespans **increase material consumption**
- Need for reusable, **repairable**, and **locally produced furniture**
- Opportunity to integrate circularity with inclusive employment

### Solution

- Developed **modular furniture system** for reuse and reconfiguration
- Designed components for disassembly, repair, and **material recovery**
- Built **concept for digital platform** enabling co-creation and circular services
- Validated TRL 8 modular furniture prototype

### Impact

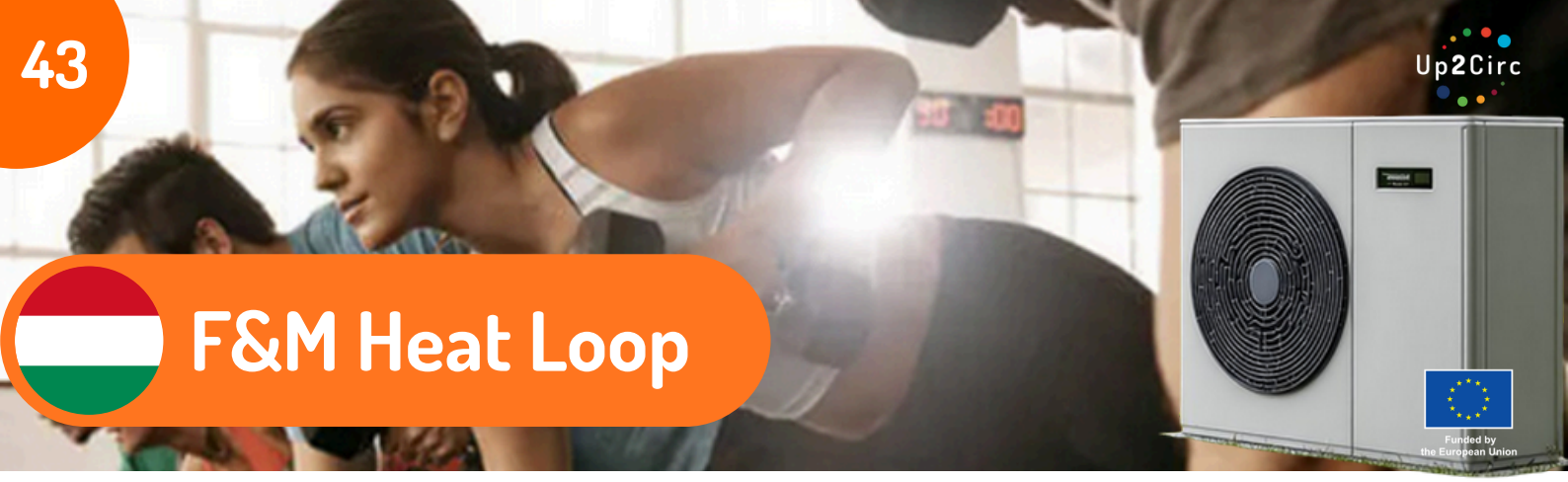
- Potential to **reduce up to 79.68 t $CO_2$/year**
- **100% renewable energy** used in prototyping phase
- Confirmed feasibility of **scaling circular production model**
- **New partnerships** supporting inclusive employment and **local manufacturing**

### Key takeaway

**Modular design** and recycled materials can **extend furniture lifecycles** while enabling scalable circular production and social impact.

SCAN ME!
Learn more about this project

A modular furniture system enables reuse, repair, and recycling, reducing environmental impact while supporting scalable local production.




# F&M Heat Loop

Company
Fájdalom-ambulancia Szolgáltató Korlátolt Felelősségű Társaság

Country
Hungary

Circular Business Model
Recovery and recycling

Sector
Proximity & Social Economy

## From Workout Heat to Renewable Energy

### Challenge

- **High energy and heating costs** in fitness centers
- **Dependence on fossil fuels** and volatile energy prices
- **Heat** generated by gym users was being **wasted**

### Solution

- Captured waste heat from gym users and indoor air
- Replaced electric boilers with a **heat pump system**
- Reused recovered heat to **produce hot water** and support heating
- Demonstrated a viable **closed-loop energy system for gyms**

### Impact

- **Reduced electricity consumption** by 121,196 kWh/year (-75%)
- **Cut emissions** by 64,437 kg $CO_2$/year
- **Covered 100% of hot water demand** for 144 days/year
- **Provided partial heating** for 176 additional days/year

### Key takeaway

Waste heat from gym users can significantly **reduce energy consumption**, costs, and **emissions in fitness centers.**

SCAN ME!

Learn more about this project

Recovering heat generated by gym users reduced energy use by 75% and cut $CO_2$ emissions by over 64 tonnes per year.



Up2Circ

# Repairing footballs

Funded by the European Union

Company
**Vista Ball**

Country
**France**

Circular Business Model
**Recovery and recycling**

Sector
**Cultural & Creative Industries**

## Giving a second life to unusable balls with social inclusion workers

### Challenge

- Up to **10 million balls discarded yearly**
- Most could be repaired
- **No repair industry**
- 7 kg $CO_2$ per new ball

### Solution

- **Partnership with sports centre**
- **Repair service** created
- Tested with players
- Non-repairable balls recycled

### Impact

- **858** balls collected
- **549** repaired balls
- **0.38 t $CO_2$ saved**
- **220 kg materials saved**
- **<50% cost** vs new balls

### Key takeaway

Balls are reused or recycled, doubling lifespan and **reducing costs by over 50%.**.

SCAN ME!

Learn more about this project

A repair and recycling initiative that extends the lifespan of sports balls while creating environmental and social value through inclusive employment.



# Sail4Up

Funded by the European Union

Company
**Junkle**

Country
**Italy**

Circular Business Model
**Recovery and recycling**

Sector
**Textiles**

## From Sails to Circular Fashion

### Challenge

- Valuable sail and nautical materials were reaching end of life without **recovery systems**
- Fashion brands needed more circular sourcing and less **reliance on virgin materials**
- **Lack of traceability** and structured collection processes

### Solution

- Developed **SailForward**, a digital platform for material collection and tracking
- Created a structured **recovery system for sail and nautical materials**
- Integrated recovered materials into **fashion production**
- **Improved traceability** and circular sourcing processes

### Impact

- Established a **production-ready recovery** and **management system**
- **Increased** the use of **secondary raw materials** in fashion products
- **Improved circularity** performance across operations
- Created a **scalable** and **replicable model** for fashion SMEs

### Key takeaway

**Digital traceability** and **material recovery** can help transform industrial waste streams into **circular fashion resources.**

SCAN ME!

Learn more about this project

A digital recovery platform helped transform end-of-life nautical materials into valuable inputs for fashion production.



# HONEY X JARS

Company
**Tesela Natura S.L**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## Circular Reuse System for Honey Glass Jars

### Challenge

- Single-use glass jars caused **high waste** and emissions
- **Glass prices increased** by 45–60% since 2019
- Strong dependence on imported packaging created **supply risks**
- Linear packaging model increased costs and **environmental impact**

### Solution

- Created **deposit-return system** for honey jars
- Collected used jars through **return points** and online sales channels
- Professionally cleaned jars for **reuse in production**
- Introduced €0.50 **incentive per returned jar**

### Impact

- **96 jars reused** in pilot phase
- **70 kg $CO_2$eq** emissions **reduced**
- **Reduced glass waste** and virgin material demand
- **Strong customer** and retailer **engagement**
- **Improved brand positioning**

### Key takeaway

**Reusable glass packaging systems** can reduce waste and emissions while **strengthening business resilience** and customer loyalty.

SCAN ME!

Learn more about this project

A deposit-return system enabled honey jars to be cleaned and reused, reducing waste, emissions, and packaging costs.



# SIRCLE

Company
**Sinergy Flow S.r.l.**

Country
**Italy**

Circular Business Model
**Recovery and recycling**

Sector
**Renewable Energy**

## Sulfur Waste for Circular Energy Storage

### Challenge

- Industrial **sulfur by-products** were **underused**
- **Needed consistent quality** for battery electrolyte production
- **Reduce reliance on critical raw materials** and volatile supply chains

### Solution

- **Reused industrial sulfur waste** in **redox** flow **batteries**
- Validated **performance comparable to conventional materials**
- Identified lower-impact sulfur purification processes
- Developed **local sourcing partnerships** with industrial suppliers

### Impact

- **Reduced dependence on virgin** and **critical raw materials**
- Potential **reductions** in **processing energy** and **$CO_2$ emissions**
- Established basis for **commercial deployment**
- Developing an 8-hour grid-scale battery pilot

### Key takeaway

**Industrial sulfur waste** can become a **valuable resource** for circular, long-duration **energy storage.**

SCAN ME!

Learn more about this project

Industrial sulfur by-products were validated as a feedstock for redox flow batteries, supporting more resilient renewable energy storage.



Up2Circ

# Airbō bags

Funded by the European Union

Company
**Naranu Studio s.r.o.**

Country
**Czechia**

Circular Business Model
**Recovery and recycling**

Sector
**Textiles**

## Giving Airbags a Second Life

### Challenge

- **Airbags** were being **incinerated** despite their high-quality material
- Bag production still generated **leftover fabric waste**
- **Legislative barriers** complicated sourcing airbag waste from scrapyards

### Solution

- Upcycled discarded airbags into **bags and backpacks**
- Optimised product patterns to **reduce material waste**
- Turned remaining scraps into **filling for yoga poufs**
- Introduced a **repair service** to extend product lifespan

### Impact

- Achieved 100% use of airbag material (**zero waste**)
- Created a **new product line** from production offcuts
- **Improved production efficiency** through optimised designs
- Resolved key legislative challenges for material sourcing

### Key takeaway

**Upcycling technical materials** and designing for repair can create a **fully circular, zero-waste business model.**

SCAN ME!

Learn more about this project

Discarded airbags were transformed into zero-waste fashion products through upcycling, repair, and smarter product design.




# USEALOE

Company
**La Vendita Natura**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## Aloe Vera Waste Valorisation into New Circular Product Lines

### Challenge

- Large volumes of **aloe vera waste** (386,750 kg/year total by-products)
- **High transport costs** to composting site (30 km distance)
- Significant **$CO_2$ emissions** from waste handling
- **Loss of value** from discarded biomass

### Solution

- Transformed aloe vera waste into **new products** (gels, powders, infusions)
- Reused by-products as **raw materials for cosmetics**
- Reduced need for virgin raw materials by 50%
- Implemented on-site valorisation of residues into **new revenue streams**

### Impact

- **90% waste reduction**
- **7,228 kg $CO_2$ emissions avoided** per year
- **50% reduction** in **virgin material use**
- **New product lines** and diversified revenue streams
- **New local jobs** created in processing and handling

### Key takeaway

Aloe vera by-products were transformed into **high-value products,** cutting waste and emissions while creating **new business opportunities**.

SCAN ME!

Learn more about this project

Aloe vera waste was upcycled into new products, reducing waste, emissions, and creating new revenue.



# SolarDry

Company
**ALHOMNA SYSTEMS**

Country
**France**

Circular Business Model
**Recovery and recycling**

Sector
**Renewable Energy**

## Solar Drying for Circular Sludge Management

### Challenge

- Sludge and digestate treatment is **energy-intensive and costly**
- High water content **increases transport emissions** and costs
- **Nutrients remain diluted** and difficult to valorise
- Need for low-carbon dehydration and **resource recovery solutions**

### Solution

- Developed **solar-powered drying system** for sludge and digestate
- **Reduced water content** using concentrated solar thermal energy
- **Recovered water** for potential local reuse
- Produced concentrated, **storable material** with fertiliser potential

### Impact

- **65% reduction** in **transported mass**
- **~650 L of water recovered** per tonne treated
- **3–4 kg $CO_2$ avoided per tonne** per 100 km of **transport**
- **Potential replacement** of 20–25 kg **nitrogen** and 20–30 kg phosphorus fertiliser per tonne
- Up to **200–300 kg $CO_2e$ avoided** per tonne

### Key takeaway

**Solar-powered sludge drying** can reduce transport, emissions, and resource consumption while **creating valuable secondary materials.**

SCAN ME!

Learn more about this project

A solar thermal process concentrates sludge and digestate, recovering water and reducing transport volumes, emissions, and disposal costs.



# Biova Flour

Company: **Biova**

Country: **Italy**

Circular Business Model: **Recovery and recycling**

Sector: **Agri-food**

## From Bread Waste to Circular Flour

### Challenge

- Large amounts of **surplus bread** were **wasted** or downcycled
- Manufacturers relied entirely on **virgin wheat flour**
- Needed a safe and profitable **way to reuse bread** at industrial scale

### Solution

- Converted bread crusts into food-grade **Ri-Flour**
- Used **industrial drying** and micronization processes
- Reintroduced the flour into production lines
- Validated a plant processing 50 t/day and **producing 16,000+ t/year of circular flour**

### Impact

- **18,000 t/year** of food **waste avoided**
- **30% circular input** replacing virgin flour
- **30–50% lower $CO_2$ emissions** vs conventional flour
- **Reduced raw material costs**
- Circular model validated with **ROI within 5 years**

### Key takeaway

**Industrial bakery waste** can be transformed into a **valuable food ingredient**, reducing waste, emissions, and raw material costs.

SCAN ME!

Learn more about this project

Surplus bread was transformed into food-grade flour and returned to production, avoiding thousands of tonnes of waste each year.



# WOOLVALUE

Company
**Soluciones Dehesa Sana S.L.**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## Circular Wool Composting for Soil Regeneration

### Challenge

- Sheep farming declined by nearly 50% in 10 years
- **60% of wool** could not enter textile markets and **became waste**
- **Soil degradation** and desertification threatened the dehesa ecosystem
- Farmers faced **disposal costs** for low-value wool

### Solution

- Converted low-value wool into **biofertilisers** and **biostimulants**
- Combined wool with manure and pruning waste through composting
- Created **nutrient-rich compost** for soil regeneration
- **Reused on-farm waste** in a circular production system

### Impact

- **50% reduction in water use** during composting
- **72 kg $CO_2$** emissions **avoided**
- **Wool value increased** from €220 to up to **€1,100/tonne**
- **Improved soil biodiversity** and **water retention**

### Key takeaway

Low-value wool can become a **high-value resource for soil regeneration** through circular composting systems.

SCAN ME!

Learn more about this project

Discarded wool was transformed into biofertilisers and biostimulants, improving soil health while creating new value for farmers.



# REINTEGRA

Company
**Sociedad Cooperativa Montevirgen**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## Circular Water and Fertiliser Recovery in Olive Processing

### Challenge

- Olive processing used large amounts of water
- High volumes of **wastewater** accumulated in evaporation ponds
- Sodium hydroxide created environmentally **harmful waste streams**

### Solution

- Replaced NaOH with **recyclable KOH** in olive processing
- Converted wastewater into potassium sulphate fertiliser
- **Reused process water** within agricultural production
- **Reduced waste** through circular water and nutrient loops

### Impact

- **Water use reduced** from 2.50 to 1.63 $m^3$/ton olives
- **Waste reduced** from 1.80 to 0.30 $m^3$/ton olives
- **Waste management costs cut** from €18,360 to €3,060
- **KOH use reduced** from 25 kg to 18 kg/ton olives

### Key takeaway

Olive processing wastewater can be transformed into **valuable fertiliser**, reducing water use, waste, and environmental impact through **circular resource reuse**

SCAN ME!

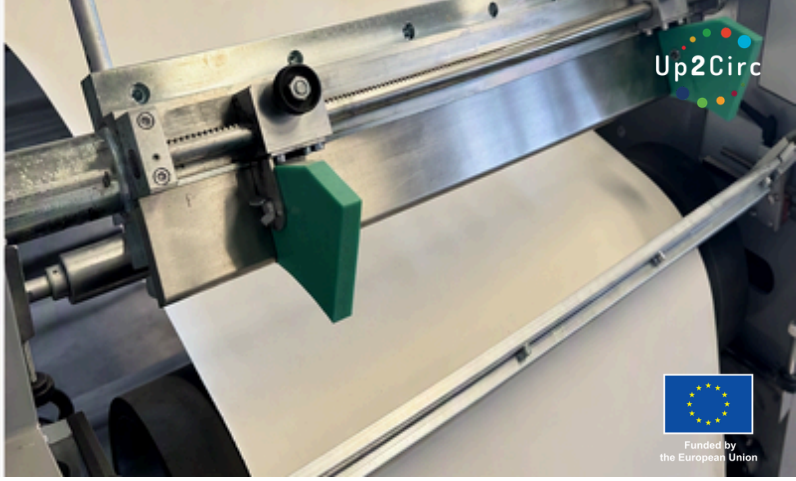
Learn more about this project

Olive processing wastewater was converted into fertiliser, significantly reducing water use, waste generation, and treatment costs.

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# POLYLAYER




Company
**Vegea S.r.l.**

Country
**Italy**

Circular Business Model
**Recovery and recycling**

Sector
**Textiles**

## Circular Recycling of Coated Textiles

### Challenge

- Coated textiles were **difficult to recycle** due to bonded material layers
- Recycling often required solvents or resulted in **incineration**
- Needed to preserve **material durability** and **quality**

### Solution

- Developed a **bio-based TPU layer** for easier separation
- Introduced solvent-free heat and **mechanical recycling**
- Recovered TPU and textile backing for **reuse**
- Scaled the process from lab to **pilot production**
- **100% elimination** of **solvents**

### Impact

- Up to **76% recycling rate**
- **34% lower energy** consumption
- **52% less waste** generated
- **42% lower greenhouse** gas **emissions** intensity
- Delivered 92 hours of **circular economy training**
- Retained at least **88%** of **key properties** after 3 recycling cycles

### Key takeaway

Designing coated textiles for disassembly enables **solvent-free recycling and repeated material reuse** without compromising performance.

SCAN ME!

Learn more about this project

A recyclable TPU layer enabled material recovery and reuse across three cycles while significantly reducing waste, energy use, and emissions.



# Plush toys recycling

Funded by the European Union

Company
**R-TEDDY**

Country
**France**

Circular Business Model
**Recovery and recycling**

Sector
**Creative & Cultural Industries**

## Giving Plush Toys a Second Life

### Challenge

- Over **5,500 tonnes** of plush toys are **discarded annually** in France
- **No dedicated recycling solution** for end-of-life plush toys
- **Valuable materials** are **incinerated** instead of reused

### Solution

- Collected and dismantled discarded plush toys
- Recycled stuffing and plush fabrics into **new products**
- Used recovered materials for **acoustic panels** and decorative items
- **Partnered with social enterprises** for sorting and dismantling

### Impact

- **4 tonnes of plush toys recycled** in 2024
- Target of 8 tonnes recycled in 2025
- Long-term goal: **recycle 50% of France's 5,500 tonnes** of discarded plush toys by 2034
- Created **work opportunities** through 3 social and disability-inclusion partners

### Key takeaway

**Discarded plush toys** can be transformed into **valuable products** while creating social and environmental benefits.

SCAN ME!

Learn more about this project

A new recycling model converts discarded plush toys into useful products while supporting inclusive employment.



Up2Circ

# VAL4GREEN

Funded by the European Union

| Company | Country | Circular Business Model | Sector |
|---|---|---|---|
| Biottonia Naturalcare | Spain | Recovery and recycling | Health |

## From Rockrose Residues to High-Value Circular Materials

### Challenge

- Large volumes of **rockrose waste** (800 tonnes/year)
- Residues caused environmental impact and **lost value**
- Needed profitable uses for lignin- and cellulose-rich waste

### Solution

- Extracted valuable compounds from plant residues
- Converted lignin and cellulose into **carbon materials**
- Developed **materials for batteries, fuel cells**, and **supercapacitors**
- Created **antioxidant and antimicrobial extracts for cosmetics**

### Impact

- **Up to 100% residue reduction** within 5 years
- **ROI** above **500%**
- At least 9 rural **jobs created**
- **Reduced $CO_2$ emissions** by replacing fossil-based materials

### Key takeaway

Plant residues can be transformed into **high-value materials for energy and cosmetics** through circular valorisation processes.

SCAN ME!

Learn more about this project

Plant residues were converted into sustainable materials for energy storage, cosmetics, and other high-value applications.



Up2Circ

# Material Recycle

Funded by the European Union

Company
**GaltTec**

Country
**Estonia**

Circular Business Model
**Recovery and recycling**

Sector
**Renewable Energy**

## Closing the Solvent Loop in Fuel Cell Manufacturing

### Challenge

- Solvents were **used once** and sent for hazardous waste treatment
- **High material consumption**, disposal needs, and **production costs**
- Need for an **internal recovery system** before scaling production

### Solution

- Developed a fractional distillation **process to recover solvents**
- **Reused recovered solvent** in new synthesis batches
- Tested 3 reuse cycles **without negative effects** on production
- Identified **potential reuse** of **rejected ceramic materials**

### Impact

- **81.8% solvent recovery**, exceeding the 80% target
- **69% reduction** in **GHG emissions**
- Around €31 **savings per** litre of **recycled solvent**
- **Strengthened internal skills** in circular manufacturing

### Key takeaway

**Solvent recovery** enabled the company to **reduce waste, emissions, and material costs** while maintaining production performance.

SCAN ME!

Learn more about this project

An internal recovery process achieved 81.8% solvent recovery while reducing emissions and material costs.




# RADRI

Company
**Datenberg**

Country
**Germany**

Circular Business Model
**Recovery and recycling**

Sector
**Digital**

## AI for Circular Rubber Production

### Challenge

- Recycled rubber is difficult to use due to **variable quality**
- Manufacturers must maintain **strict product performance**
- **Valuable rubber** often **ends up as waste** instead of being reused

### Solution

- Developed the concept of an **AI-supported formulation assistant**
- **Digitalised rubber recipes** and production data
- **Analysed** how recyclates affect **product quality**
- **Worked with manufacturers** to identify barriers and needs

### Impact

- Enabled **more reliable use** of recycled rubber materials
- **Reduced the risk of quality issues** when using recyclates
- Established initial **partnerships with manufacturers**
- **Strengthened expertise** in AI, sustainability, and circularity
- Created a **prototype concept** for a **new software module**

### Key takeaway

**AI and data analysis** can help manufacturers safely **increase the use of recycled materials in rubber production.**

SCAN ME!

Learn more about this project

An AI-driven formulation tool helps manufacturers integrate recycled rubber while maintaining product quality and reducing waste.



# REINTEGRA

Company
**Sociedad Cooperativa Montevirgen**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## Closing the Water Loop in Olive Processing

### Challenge

- **High water consumption** in olive processing (2.5 $m^3$/tonne)
- Large volumes of **polluting wastewater** (1.6 $m^3$/tonne)
- **High waste management costs** and growing evaporation ponds
- Significant **use of virgin sodium hydroxide** (NaOH)

### Solution

- Reused lye and wash water to prepare **new NaOH solutions**
- Reintroduced wastewater into the production process
- **Reduced freshwater use** and wastewater generation while maintaining product quality

### Impact

- **Water consumption reduced** from 2.5 to 1.8 $m^3$/tonne (-28%)
- **Wastewater generation reduced** from 1.6 to 0.8 $m^3$/tonne (-50%)
- Annual waste **management costs cut** by 50%
- **NaOH consumption reduced** from 45 kg to 38 kg/tonne

### Key takeaway

**Reusing alkaline wastewater** can significantly **reduce water use, waste, and costs** in olive processing.

SCAN ME!
Learn more about this project

Wastewater reuse cut water consumption, halved wastewater generation, and reduced operating costs in table olive production.

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# GREENPRINT

Company
**Isuschem Srl**

Country
**Italy**

Circular Business Model
**Recovery and recycling**

Sector
**Energy Intensive Industries**

## Waste-Derived Bio-Solvents for Sustainable Printing

### Challenge

- Printing relied heavily on **fossil-based solvents**
- Waste oils remained an **underused resource**
- Needed **sustainable alternatives** without compromising performance or compliance

### Solution

- Developed **RenewInk 5000** using waste oils
- Created **bio-based solvents** for inks and varnishes
- Validated performance, formulation stability, and **regulatory compliance**
- Used **life-cycle assessment** to guide formulation choices

### Impact

- **Improved 16** of 18 **environmental impact categories**
- **Reduced dependence** on virgin fossil **resources**
- **Created value** from waste oils
- Supported more **sustainable printing inks** and varnishes

### Key takeaway

**Waste oils can replace fossil-based raw materials in printing** through high-performance, lower-impact bio-based solvents.

SCAN ME!

Learn more about this project

Waste oils were converted into bio-based solvents, improving the environmental performance of printing inks and varnishes.




# BIOREC

Company
**Bosque Urbano**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## From Green Waste to Valuable Resources

### Challenge

- **Large volumes of green waste** and old **artificial turf**
- **High disposal costs** and environmental impact
- **Valuable materials** were being **lost** instead of recovered

### Solution

- **Converted green waste into biochar** through pyrolysis
- **Reused artificial turf** in cement-based garden products
- Tested and **validated solutions with research centres**

### Impact

- **$CO_2$ emissions reduced** by **99.35%**
- 28.2% of **green waste reused** on-site **as mulch**
- Biochar achieved 84.5% organic carbon and EBC Premium standards
- **Water retention improved** from 49.85% to 74.43%
- **Recovered** 7.2 kg of **plastic** per 10 m of artificial turf

### Key takeaway

**Green waste and artificial turf** can become **valuable secondary materials** through recovery and recycling.

SCAN ME!

Learn more about this project

Waste from landscaping activities was converted into biochar and recycled construction products, cutting $CO_2$ emissions by over 99%.

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# Reusing hotel fabrics

Company
**ETOFE**

Country
**France**

Circular Business Model
**Recovery and recycling**

Sector
**Textiles**

## Luxury Hotel Textiles Reimagined as Circular Fashion Accessories

### Challenge

- High-quality hotel textiles were **discarded as waste**
- Accessory production depended on **virgin imported materials**
- Need for traceable, local, and circular supply chains
- **Difficulty integrating reclaimed materials** into market-ready products

### Solution

- **Recovered luxury fabrics** from 5-star hotels
- Reused leather offcuts as labels and reinforcements
- Sourced zippers, straps, and buckles **locally in France and Europe**
- Produced accessories through **local integration workshops**

### Impact

- **100% of textiles sourced** from reclaimed hotel fabrics
- **~3 tonnes of textile waste diverted** annually
- **100% replacement** of virgin label materials **with reclaimed leather**
- Created employment and **training opportunities** through **integration workshops**

### Key takeaway

Reclaimed textiles and leather can be transformed into **profitable fashion accessories** through local sourcing, **eco-design**, and circular production.

SCAN ME!

Learn more about this project

Hotel textiles and leather offcuts were transformed into circular fashion accessories through local production and reuse.




# E-BIOPOND

Company
**Algaria Srl**

Country
**Italy**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## Circular Spirulina Production Through Water and Nutrient Recovery

### Challenge

- Spent cultivation media and food-industry **waste contained valuable water and nutrients**
- Variable waste composition made **reuse difficult**
- Needed to **maintain Spirulina productivity** while **reducing resource use**

### Solution

- Integrated E-BIOPOND bioelectrochemical filters
- Treated wastewater to **recover nutrients**
- **Reused treated water** and nutrients in Spirulina cultivation
- Developed **procedures** for **process optimisation** and **scale-up**

### Impact

- **70–90% reduction** in **organic pollution** (COD)
- Up to **80% nitrogen conversion**
- **50–60%** cultivation **water reused**
- Up to **80% reduction in mineral fertiliser** needs
- **Maintained** conventional Spirulina **productivity**

### Key takeaway

Circular water and nutrient recovery can make **Spirulina production more resource-efficient** without compromising productivity.

SCAN ME!
Learn more about this project

Bioelectrochemical filtration enabled the reuse of water and nutrients from production waste, reducing resource and fertiliser needs.



# Brave_of by Esther Cortes

Company
**BRAVE_OF**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Textiles**

## Turning Textile Waste into New Fashion

### Challenge

- Unsold garments and samples created **textile waste**
- Needed more efficient and sustainable material use
- Wanted to **reuse yarn** and clothing instead of discarding them

### Solution

- **Recycled yarn** and reused old garments
- Unravelled and re-knitted materials into **new clothing**
- Applied **circular design** and reuse strategies
- Produced **new women's and baby garments** from waste textiles

### Impact

- **30% waste reduction** achieved
- **Created** 1 full-time and 5 part-time **jobs**
- **Reused most materials** successfully
- **Strong market demand** for recycled garments

### Key takeaway

Textile waste can be transformed into **high-quality fashion products** through **circular reuse and redesign.**

SCAN ME!

Learn more about this project

Unsold garments and leftover yarn were transformed into new high-quality clothing through circular reuse and re-knitting.

Up2Circ

# Ground to grown

Funded by the European Union

Company: **VOX terra, o.z.**

Country: **Slovakia**

Circular Business Model: **Recovery and recycling**

Sector: **Agri-food**

## Brewing a Circular Future for Mushroom Farming

### Challenge

- Large amounts of coffee grounds were **discarded as waste**
- Needed to **replace virgin sawdust** in mushroom cultivation
- Required a **reliable collection** and processing system

### Solution

- Collected spent coffee grounds from **local cafés** and **municipalities**
- Used coffee grounds as a **nutrient-rich mushroom substrate** (up to 75%)
- Created a circular model by reusing spent substrate as **compost and soil products**
- Built **local supply** and customer networks

### Impact

- **75%** of **substrate replaced** with recycled coffee grounds
- **2.5 tonnes/year** of **coffee grounds recovered**
- **67% less virgin sawdust** required
- **Revenue potential** up to €30,000/year at full scale

### Key takeaway

**Spent coffee grounds can replace virgin materials** while creating local food, jobs, and new circular business opportunities.

SCAN ME!

Learn more about this project

Spent coffee grounds replaced most of the virgin substrate, reducing waste while supporting local mushroom production.



Up2Circ

# Ninety spare parts

Funded by the European Union

Company
**NINETY**

Country
**France**

Circular Business Model
**Recovery and recycling**

Sector
**Electronics**

## Building a Circular Market for Smartphone Spare Parts

### Challenge

- **Refurbished spare parts** made **up <1%** of the French market
- Most defective parts were replaced with **new imported components**
- Lack of a structured local circular supply chain

### Solution

- Refurbished screens, chassis, motherboards, and cameras
- Offered **refurbishment-as-a-service** to wholesalers and repair networks
- Used **advanced repair techniques** such as micro-soldering and optical calibration
- Built a **local circular supply chain** using repairable smartphones from partners

### Impact

- **87% lower $CO_2$ impact** than a new smartphone (79 kg $CO_2$ saved per device)
- **Preserved critical materials** such as gold, cobalt, tantalum, copper, and platinum
- **Profitable** from year 1 according to the business plan
- Created **highly skilled local repair jobs** in a market with fewer than 10 experts in France

### Key takeaway

**Refurbishing smartphone parts** can cut emissions, preserve critical materials, and build a **profitable local circular supply chain**.

SCAN ME!

Learn more about this project

Repairable smartphone components were refurbished into high-value spare parts, reducing imports and extending device lifespans.



# YorGut Circular

Company
**La Verabat S.L.**

Country
**Spain**

Circular Business Model
**Recovery and recycling**

Sector
**Agri-food**

## Closing the Loop on Glass Packaging

### Challenge

- Single-use glass packaging created **high costs and waste**
- **High emissions** from glass production and transport
- Rural location made **packaging recovery difficult**

### Solution

- Developed a **local return-and-reuse system** for jars and bottles
- Introduced **collection hubs** and professional sanitisation
- **Reused discarded beer bottles** from local bars
- Powered cleaning with **solar-assisted infrastructure**

### Impact

- **72% lower $CO_2$ emissions** per jar and 68% per bottle
- Up to **5.3 kg of glass waste avoided** per jar
- **2.9 tonnes of $CO_2$ reduced** annually through renewable energy
- **33% lower packaging costs** after 8–12 months
- Expected **75–85% return rate** for reusable packaging

### Key takeaway

**Community-based packaging reuse** can reduce costs, emissions, and waste while **strengthening rural businesses.**

SCAN ME!

Learn more about this project

A local return-and-reuse system cut packaging emissions by over 70% while lowering costs for a rural food producer.



Up2Circ

# Recycling Lines Photovoltaic Panels

Funded by the European Union

Company
**Mozek s.r.o.**

Country
**Czechia**

Circular Business Model
**Recovery and recycling**

Sector
**Renewable Energy**

## Recovering Valuable Materials from End-of-Life Solar Panels

### Challenge

- Most solar panels are **crushed at end of life**
- **Valuable materials** like silver and copper are **lost**
- Growing need for **scalable PV recycling solutions**

### Solution

- Developed thermal oxidation recycling at 600°C
- **Separated** glass, silicon, metals, and other **components**
- **Recovered valuable materials** for further reuse
- Reused part of the generated heat to **improve efficiency**

### Impact

- Validated a gentler, **energy-efficient recycling method**
- **Enabled recovery of silver and copper** that would otherwise be lost
- Designed both **stationary and mobile recycling lines**
- Mobile system aims to **cut transport costs** and **emissions**

### Key takeaway

Advanced recycling can **recover valuable materials from solar panels** instead of losing them in mixed waste.

SCAN ME!

Learn more about this project

A new recycling process separates and recovers glass, silicon, silver, and copper from solar panels while reducing transport and energy impacts.



# Eggshellent

Company: **Alchim SC**

Country: **Italy**

Circular Business Model: **Recovery and recycling**

Sector: **Agri-food**

## Eggshell Waste for Sustainable Egg Packaging

### Challenge

- **Conventional egg packaging** relies on **cellulose and plastic**
- **Large volumes of eggshell waste** remain underused
- Needed biodegradable, food-safe, high-performance packaging

### Solution

- Developed **egg trays from eggshell powder** and recycled cellulose
- Optimised material strength and **recyclability**
- Tested **food safety** and **biodegradability**
- Filed a provisional patent
- **Comparable strength** and tear resistance to standard trays

### Impact

- **20% less virgin cellulose** used
- **43%** of local **eggshell waste redirected** from composting
- **20%** estimated **$CO_2$** emissions **reduction**
- **Strong interest** from **egg producers** and **packaging distributors**

### Key takeaway

**Eggshell waste can replace virgin materials** in sustainable, high-performance **packaging.**

SCAN ME!

Learn more about this project

Recycled eggshells and paper fibres were combined to create biodegradable egg trays with lower material use and emissions.

70



# Insane Festival REUT

Company
**AZUVIA**

Country
**France**

Circular Business Model
**Recovery and recycling**

Sector
**Cultural & Creative Industries**

## Mobile Water Reuse for Sustainable Festivals

### Challenge

- **High water consumption** at summer festivals in water-stressed areas
- **No on-site solution** for treating and reusing shower greywater
- **Limited sanitation infrastructure** in remote rural event locations
- **High environmental pressure** from wastewater discharge

### Solution

- Developed **mobile modular system** to treat festival shower water
- **Reused 80–99%** of greywater on-site
- Used biological treatment and **solar-powered** operation
- Deployed **rental-based** water reuse service model

### Impact

- **Reduced freshwater demand** in water-scarce periods
- **Lower pollution** from wastewater discharge
- **€500K projected revenue** over 2 years
- **New jobs** in deployment and maintenance

### Key takeaway

**Festival wastewater** can be efficiently treated and **reused on-site, reducing water use** and environmental impact through a scalable service model.

SCAN ME!

Learn more about this project

A mobile treatment system enables on-site reuse of up to 99% of festival shower water, reducing freshwater use and environmental impact.