

# Good Practice Examples

Deliverable, D.1.1.2

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## Table of Contents

|                                                                           |           |
|---------------------------------------------------------------------------|-----------|
| <b>Introduction .....</b>                                                 | <b>2</b>  |
| <b>Summary of good practice cases (D.1.1.2).....</b>                      | <b>3</b>  |
| <b>Conclusion and Overview of thematic areas and business forms .....</b> | <b>11</b> |

# Introduction

Europe has long been a global leader in recycling and waste management, continuously pushing the boundaries of innovation in its pursuit of a circular economy. This shift marks a fundamental change in how resources are used, aiming to reduce waste generation, extend product life cycles, and ensure that materials are reused and recycled to their fullest potential. Central to this transition is the concept of minimizing environmental impact while fostering economic sustainability, resource efficiency, and resilience. From forward-thinking policies to groundbreaking technologies, Europe's commitment to transforming its linear economic model into a circular one reflects a broader global trend towards sustainability.

At the heart of this transformation are companies, NGOs, and governmental bodies that are not only adopting but actively championing circular economy principles. These organizations are pioneering solutions to some of the most pressing environmental challenges of our time, including plastic waste, resource depletion, and inefficient production practices. Enterprises across the continent are innovating by turning waste into high-value products, creating new materials that reduce environmental harm, and reimagining the design of goods to ensure they can be easily recycled or repurposed. These efforts not only address environmental concerns but also set new standards for sustainability within their respective industries.

The role of small and medium enterprises (SMEs) is particularly notable, as many of these smaller organizations are leading the charge in developing agile, innovative solutions. From bio-composting pilots to cutting-edge recycling processes that turn plastic waste into food-grade materials, SMEs are demonstrating that impactful environmental stewardship can also drive economic growth. At the same time, large multinational corporations and non-governmental organizations are making significant contributions, leveraging their global reach to scale sustainable practices and push for systemic change.

Equally important are the technological advancements that are reshaping traditional business practices. These innovations include everything from advanced recycling systems and eco-friendly materials to artificial intelligence-powered waste sorting technologies. Companies are increasingly integrating sustainability into their core business models, focusing on eco-design, where products are created with their eventual recyclability in mind. This not only reduces waste at the source but also facilitates the re-integration of recycled plastics and other materials back into the production cycle, contributing to a more closed-loop system.

Moreover, Europe's transition towards a circular economy is not only about the private sector's innovations but also about the collaboration between governments, industry, and local communities. Public policies, such as the *European Union's Circular Economy Action Plan*, provide critical frameworks and incentives for businesses to innovate, while local communities play a key role in waste collection and consumer behavior. These efforts are underpinned by an overarching goal of promoting sustainability not just as an environmental necessity, but as a driver of economic resilience, job creation, and long-term prosperity.

This overview aims to highlight the most exemplary sustainable practices emerging across Europe, focusing on diverse and impactful approaches to environmental stewardship, waste reduction, and circular economy principles. Through a combination of regulatory frameworks, corporate initiatives, and grassroots innovation, the Danube Region is making significant strides in its journey towards a more sustainable and resilient future. By exploring the various sectors and regions engaged in this effort, we can gain valuable insights into how different actors—from SMEs to large corporations and NGOs—are making a tangible difference in reducing environmental impacts, improving resource efficiency, and ultimately creating a more sustainable world for future generations.

## Summary of good practice cases (D.1.1.2)

| Title of Practice                                                     | Practice Owner                      | Country                | Type of Practice                                                                                                                                | Short Description                                                                                          | Evidence of Success                                                                                              |
|-----------------------------------------------------------------------|-------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| ADIVA ONE – a sleep and relaxation platform                           | Innoveris Solutions SRL, <b>SME</b> | Romania                | Product design, Materials processing, Reintegration of recycled plastic                                                                         | A sleep solution enhancing sleep quality with programmable control and silent servomotors.                 | Increased workforce, market segment diversity, positive impacts on health and safety.                            |
| From waste to ornaments                                               | Elektro Tim, <b>SME</b>             | Bosnia and Herzegovina | Technology, Material sourcing, Recycling Process, Materials processing, Collection/sorting of plastic waste, Reintegration of recycled plastics | Producing eco-friendly decorations from repurposed PET waste, promoting environmental protection.          | Community collaboration, waste reduction, positive feedback from residents and businesses.                       |
| Recycling Plastic Bags to Create Eco-Friendly Products                | Kesa d.o.o., <b>SME</b>             | Bosnia and Herzegovina | Technology, Material sourcing, Product design, Recycling process, Materials processing, Reintegration of recycled plastic                       | Recycling plastic bags into practical products like tote bags and backpacks, addressing plastic pollution. | Increased awareness, engagement with NGOs and government agencies, recycling of plastic bags increased annually. |
| Implementation of Comprehensive Waste Management and Circular Economy | “E-CIRCULAR” NGO, NGO               | Republic of Moldova    | Policy/business support, Collection/sorting of plastic waste, Reintegration of recycled plastics                                                | Promoting circular economy principles through education and consultancy in Moldova.                        | Improved waste management practices, stakeholder engagement, educational impact.                                 |

| Title of Practice                              | Practice Owner                    | Country | Type of Practice                                                                                                                       | Short Description                                                                     | Evidence of Success                                                        |
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| EcoFlakes - sustainable road building material | Ecopals GmbH, <b>SME</b>          | Germany | Technology, Product design, Recycling process, Materials processing, Sorting of plastics and waste, Reintegration of recycled plastics | Producing asphalt additives from recycled plastics for sustainable road construction. | CO2 savings, infrastructure improvements, innovation awards.               |
| Processes for plastics recycling               | UBM Amgro Zrt., Enterprise        | Hungary | Technology, Business Model, Material sourcing, Recycling process                                                                       | Developing sustainable animal feeds and managing packaging waste responsibly.         | Recycling rates, waste reduction initiatives, market expansion.            |
| Processes for plastics recycling               | UgrinPack-Erdősi Kft., <b>SME</b> | Hungary | Policy/business support, Technology, Material sourcing, Product design, Collection/sorting of plastic waste                            | Manufacturing sustainable packaging materials from recycled sources.                  | Environmental impact reduction, sustainable packaging solutions.           |
| Sustainable Packaging                          | Werner & Mertz, Enterprise        | Austria | Policy/business support, Technology, Material sourcing, Collection/sorting of plastic waste                                            | Using 100% recycled PET in packaging, creating fully recyclable stand-up pouches.     | Environmental sustainability, collaboration with eco-friendly initiatives. |
| Alkus – Innovative Systems                     | alkus AG, Enterprise              | Germany | Technology, Product design, Recycling process                                                                                          | Developing solid plastic panels for construction to replace traditional materials.    | Enhanced construction materials, durability, and environmental benefits.   |

| Title of Practice                                                         | Practice Owner                | Country | Type of Practice                                                                                                                                                         | Short Description                                                                                                                                                                                                                        | Evidence of Success                                                                                                                                                                     |
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| Sustainable sportswear delivery                                           | Fitico Sportswear, <b>SME</b> | Austria | Technology, Business model, Material sourcing                                                                                                                            | Fitico Sportswear creates eco-friendly sportswear from recycled fishing nets. Collaborating with a Romanian company, they developed a reusable shipping bag made from polypropylene, which can be recycled at the end of its life cycle. | Involvement of multiple stakeholders, increased awareness, and media coverage. Several collections of sustainable sportswear and successful collaborations with companies across Europe |
| Production waste into high-quality raw materials                          | Aurora GmbH, Enterprise       | Germany | Policy/business support, Technology, Material sourcing, Recycling process, Materials processing, Collection/sorting of plastic waste, Reintegration of recycled plastics | Recycling industrial plastic waste into high-quality raw materials.                                                                                                                                                                      | CO2 savings, consistent product quality, lean logistics system.                                                                                                                         |
| Cyclize – enabling a carbon circular economy                              | Cyclize GmbH, <b>SME</b>      | Germany | Policy/business support, Product design, Recycling process, Reintegration of recycled plastics                                                                           | Converting plastic waste into chemical intermediates for new product manufacture.                                                                                                                                                        | Secured funding for innovative technology, CO2 emissions reduction.                                                                                                                     |
| Long-term solutions for waste management in relation to nature protection | MF Plast Serv SRL, <b>SME</b> | Romania | Policy/business support, Product design, Recycling process, Collection/sorting of plastic waste                                                                          | Offering comprehensive waste management solutions and recycling services.                                                                                                                                                                | Expansion of client network, waste reduction initiatives.                                                                                                                               |

| Title of Practice                                       | Practice Owner                       | Country        | Type of Practice                                                                                                                            | Short Description                                                                                                                                                                               | Evidence of Success                                                                                                                                                                                       |
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| Recycling and collection of plastic and rigid PVC waste | TeraPlast Recycling, Enterprise      | Romania        | Policy/business support, Product design, Recycling process                                                                                  | Recycling plastic and rigid PVC waste to promote environmental sustainability.                                                                                                                  | Top 10 European PVC recyclers, market share growth, workforce expansion.                                                                                                                                  |
| Fortelock ECO                                           | Fortemix produkce s.r.o., <b>SME</b> | Czech Republic | Technology, Business Model                                                                                                                  | Fortelock ECO flooring tiles project (2018-2020) focuses on re-processing PVC post-consumer waste from old cables and wires, involving collection, sorting, compounding, and injection molding. | Reduced 2,600 tonnes of PCR-PVC from landfilling to circular use. Two production companies currently use this method. Approx. 60 new jobs created. Invest of about 5.5 mio. € in Fortelock.               |
| Retextil®                                               | Dimatex CS spol. s r.o., <b>SME</b>  | Czech Republic | Technology, Business Model, Material Sourcing, Product Design, Recycling Process, Materials Processing, Collection/Sorting of Plastic Waste | Re-evaluate secondary raw materials (textiles) with a positive environmental impact, focusing on customer satisfaction.                                                                         | From 2025, municipalities will be required to collect textiles separately. 2.600 tonnes of PCR-PVC reduced from landfilling to circular use. At present 2 production companies are producing by this way. |



| Title of Practice                                                               | Practice Owner                  | Country | Type of Practice                                                    | Short Description                                                                                                                                                                          | Evidence of Success                                                                                                                                                                                                                                                                                                                                                                                   |
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| Soma Bioworks - Biosporin                                                       | White Lemur, <b>Startup/SME</b> | Serbia  | Technology, Material Sourcing, Product Design, Materials Processing | White Lemur is a startup creating biodegradable materials to replace plastic, offering an eco-friendly, cost-effective alternative to styrofoam using biosporin, a non-flammable material. | Regulatory compliance, maintaining brand image, eco-friendly market positioning. 0.2 tonnes of CO2 absorbed/tonne of biosporin produced; Reduction of 8.9 tonnes of CO2/tonne of biosporin; Prevention of 2.5-3.7 tonnes of methane, and 300kg of plastic waste per tonne of biosporin; Uses 98% less energy than expanded polystyrene, generates no wastewater, biodegrades into organic fertilizer. |
| Manufacturing and Development of Eco-friendly Adhesives for Industrial Purposes | Tetragon d.o.o., <b>SME</b>     | Serbia  | Technology, Recycling Process                                       | Tetragon develops eco-friendly adhesives for industrial packaging, aiming to replace synthetic                                                                                             | Partial replacement resulted in the reduced usage of synthetic material in industrial bag production                                                                                                                                                                                                                                                                                                  |

|                                                                            |                                 |          |                                                                                                               | adhesives with bio-based, biodegradable solutions.                                                                                                                                                      | from traditional 100% down to 20%.                                                                                                                                                                                    |
|----------------------------------------------------------------------------|---------------------------------|----------|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title of Practice                                                          | Practice Owner                  | Country  | Type of Practice                                                                                              | Short Description                                                                                                                                                                                       | Evidence of Success                                                                                                                                                                                                   |
| Decreasing the Amount of Textile Waste Through Recycled Polypropylene Yarn | CHEMOSVIT FIBROCHEM, <b>SME</b> | Slovakia | Technology, Material Sourcing, Recycling Process                                                              | Reducing textile waste from fast fashion by using recycled polypropylene raw material for PROLEN Recycled yarn, enabling a closed life cycle.                                                           | Reduced textile waste through mechanical recycling, preventing waste from ending up in landfills or incinerators. Three main brands using PROLEN Recycled yarn; ISPO award received by customer using recycled fiber. |
| Laanik modules                                                             | ESOX spol s.r.o., <b>SME</b>    | Slovakia | Product design, Materials processing, Collection/sorting of plastic waste, Reintegration of recycled plastics | The Laanik module, made from sorted polypropylene recyclate and processed via injection molding, is designed for outdoor use, aiming for 2-3 upcycles before full circularity through repolymerization. | The product is popular with kindergartens, older adults, and 50+ gardeners. Municipalities and regional projects appreciate its circular design. Positive reviews and Czech competition underscore its success.       |
| Sharvan.... share one!                                                     | Project M1 s.r.o., <b>SME</b>   | Slovakia | Material sourcing, Product design, Materials Processing                                                       | The Sharvan bike adapts to different heights (120-205 cm) with a customizable, foldable frame. It combines durable injection-molded                                                                     | They have been recognized at Expo Dubai, received design                                                                                                                                                              |

|                                                            |                             |                |                                                                                                                                                     | composites and aluminum for safety and versatility.                                                                                                                                                                                                                                                                                   | awards, and are available in e-bike models.                                                                                                                                                                                                                                                                                          |
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| Title of Practice                                          | Practice Owner              | Country        | Type of Practice                                                                                                                                    | Short Description                                                                                                                                                                                                                                                                                                                     | Evidence of Success                                                                                                                                                                                                                                                                                                                  |
| ECORETAN green polyol                                      | ECORETAN s.r.o., <b>SME</b> | Czech Republic | Materials Processing, Recycling Process, Technology                                                                                                 | <p>ECORETAN green polyol is a recycled polyol produced via chemical recycling from waste polyurethanes. It is</p> <p>Customized for various applications and can replace up to 30% of crude oil-based polyol or be used alone. This process promotes sustainability by converting polyurethane waste into valuable raw materials.</p> | <p>The carbon footprint of ECORETAN green polyol is 2.7 times lower than that of crude oil-based polyols</p> <p>The amount of recyclate is on average two times higher than the input raw material (waste polyurethane), ECORETAN's recycling line is capable of processing several hundred tons of polyurethane waste per year.</p> |
| Technology of internal PVC/PES waste processing technology | Fatra, a. s., Enterprise    | Czech Republic | Material Sourcing, Business Model, Recycling Process, Materials Processing, Collection/sorting of plastic waste, Reintegration of recycled plastics | The new granulation line, operational since 2022, processes PES "cupanina" using fluidised bed technology to separate 80% of recoverable PVC.                                                                                                                                                                                         | <p>2022: 1,730 tons of plastic waste and materials suitable for recycling processed on the line in Chropyně.</p> <p>Approximately 80% of recoverable PVC separated from waterproofing insulations. 598 tons of</p>                                                                                                                   |

|                       |                                    |                |                                                                                |                                                                                                                    | regranulate produced sold or internally processed.                                                                                                                                                                                                                                                                    |
|-----------------------|------------------------------------|----------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title of Practice     | Practice Owner                     | Country        | Type of Practice                                                               | Short Description                                                                                                  | Evidence of Success                                                                                                                                                                                                                                                                                                   |
| Returnable PET bottle | Vöslauer Mineralwasser, Enterprise | Austria        | Technology, Business Model, Product design, Reintegration of recycled plastics | A fully recyclable PET bottle, partly made from RePET, was introduced, supporting sustainability with 12+ refills. | Collaboration among stakeholders; increased customer awareness and awards for reusable PET bottles boosting company image. Reduced waste by 400 tons/year, cutting CO2 emissions by 30%; 22% sales growth; all non-returnable bottles made from 100% recycled PET; aiming to double reusable products to 40% by 2030. |
| SPURO FOAM BIO        | SPUR a.s., Enterprise              | Czech Republic | Technology, Material Sourcing                                                  | Design of biobased products that considers materials resources as well as renewable energy                         | SPURO FOAM BIO has increased awareness of bio-based plastics, promoted sustainability, and popularized the "I'm green" logo. The company invested in photovoltaics, now                                                                                                                                               |

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|--|--|--|--|--|-----------------------------------------------|
|  |  |  |  |  | sourcing up to 15% of energy from renewables. |
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# Conclusion and Overview of thematic areas and business forms

The showcased practices from various countries across the consortium exemplify a strong commitment to sustainability and innovation within small to medium-sized enterprises (SMEs) and larger enterprises alike. These initiatives are pivotal in advancing circular economy principles, reducing environmental impact, and promoting sustainable practices in their respective industries. By focusing on recycling, innovative product design, and responsible waste management, these businesses are not only driving economic growth but also paving the way towards a more resilient and environmentally friendly future. Their efforts underscore the importance of collaboration, innovation, and continuous improvement in achieving sustainable development goals on a global scale.

The listed companies from countries like Romania, Bosnia and Herzegovina, Serbia, Slovakia, Hungary, Germany, Austria, and the Czech Republic demonstrate a strong commitment to sustainability and innovation across various business forms, including SMEs, enterprises, startups, and NGOs. The showcased practices span diverse thematic areas, illustrating innovative approaches to sustainability and circular economy principles. These initiatives are spearheaded by a variety of entities.

Below is an overview summarizing the thematic areas where exemplary practices are situated and the entities involved (SMEs, large enterprises, etc.):

## **SMEs (Small and Medium Enterprises):**

- SMEs dominate the list, showcasing their agility and innovation, particularly in the development of eco-friendly products and the implementation of circular economy practices. Companies like *Innoveris Solutions SRL* (Romania), *Elektro Tim* (Bosnia and Herzegovina), and *Fitico Sportswear* (Austria) highlight how SMEs can effectively contribute to sustainability while maintaining growth. Their smaller size allows for quicker adaptation and niche market targeting, often leading to high levels of innovation in product design and materials processing.

## Enterprises:

- Larger enterprises, such as *Vöslauer Mineralwasser* (Austria), *Werner & Mertz* (Austria), and *Fatra a. s.* (Czech Republic), bring significant resources and market reach to the table. These companies are able to invest heavily in research and development, allowing for the creation of comprehensive and scalable solutions, such as fully recyclable PET bottles or advanced PVC waste processing technologies. Enterprises tend to focus on large-scale impact, leveraging their established brand and infrastructure to drive widespread environmental change.

## Startups:

- Startups like *White Lemur* (Serbia) are driving new, disruptive technologies. These companies often focus on niche areas within the sustainability sector, such as biodegradable materials, and offer innovative solutions that larger companies may not explore due to higher risk factors. Startups are crucial in pushing the boundaries of current technology and business models, often leading to breakthroughs that can later be adopted by larger firms.

## NGOs:

- The presence of NGOs, such as *"E-CIRCULAR"* (Republic of Moldova), underscores the importance of policy support and education in promoting circular economy practices. These organizations play a critical role in stakeholder engagement, public awareness, and the implementation of sustainable practices across broader societal frameworks. NGOs often serve as the link between businesses, governments, and the public, ensuring that sustainability initiatives have a holistic impact.

## Comparison of Business Forms

- **Innovation and Agility:** SMEs and startups tend to lead in innovation due to their ability to quickly adapt to new trends and technologies. This agility allows them to experiment with new ideas and processes, often leading to groundbreaking solutions that larger enterprises may adopt later.
- **Resource Allocation and Scalability:** Enterprises, with their vast resources, are better positioned to scale successful innovations and implement comprehensive sustainability strategies. Their large-scale operations also mean they can have a more significant immediate impact on sustainability goals, such as large-scale recycling initiatives or the development of sustainable packaging.
- **Focus and Niche Markets:** Startups and SMEs often focus on specific niches within the sustainability sector, offering specialized solutions that cater to particular markets or needs. This focus allows them to develop expertise and provide highly tailored products and services, which can sometimes be overlooked by larger, more generalized enterprises.
- **Influence and Advocacy:** NGOs play a unique role in influencing policy, raising awareness, and ensuring that sustainability efforts are integrated into the broader societal context. While they may not directly produce goods, their work is crucial in creating an environment where sustainable business practices can thrive.

Overall, each business form contributes uniquely to the sustainability landscape in the countries listed. SMEs and startups drive innovation and niche solutions, enterprises provide the resources for large-scale implementation, and NGOs ensure that these efforts are supported by the necessary policy and public engagement. Together, they create a robust ecosystem for advancing circular economy and sustainable practices. They exemplify a diverse range of initiatives across Europe aimed at reducing environmental impact and promoting circular economy principles within their respective industries.