Output Factsheet

Output title:

O.1.2 Guideline on how to develop a circular plastics prototype including Demo case factsheets reflecting technology know-how

Summary of the output (max. 2500 characters)

The Guideline for Circularity in the Plastics Industry aims to support small and medium-sized enterprises (SMEs) in adopting circular economy principles. It provides practical, structured guidance and addresses the need for clarity and transparency in implementing sustainable practices. IT covers the entire lifecycle of products—from design and production to reuse, recycling, and waste management. It introduces the four foundational pillars of circularity: recyclability, recycled content, reuse, and collection systems. It outlines essential preparation steps, including internal analysis using Design Thinking Workshops (DTWs) and leveraging AI tools for legal and environmental mapping, e.g. NotebookLM that works with already valid legislation, which is GIVEN and cannot be changed or otherwise distorted.

It also details prototyping strategies, business model integration, and impact assessment through metrics like lifecycle analysis and stakeholder feedback and includes 9 demo case factsheets reflecting technology know-how.

Based on essential results, knowledge and information from design thinking of innovative plastics solutions (piloting DTWs) the approach was defined for implementing the development of a prototype concept and demo cases (D1.2.4) and for drafting documents about circularity in plastics industry (D1.2.5.) which are the main parts of O.1.2.

Specific significant and innovative prototype solutions for concrete applications were defined - including their assessment and evaluation of the impact on circularity and sustainability – and resulted in 9 demo case factsheets.

A significant fact is the ongoing implementation of EU legislation in the sense that many regulations and directives are already available in their overarching form, but often secondary and tertiary legislation documents - i.e. delegated acts and, technical standards - are not yet available. But the essential facts and requirements for the plastics processing sector are already given and known, e.g. PPWR, D4R, the RecyClass system, Ecodesign. Legislative measures, on the one hand, create a kind of potential limitation for "unlimited" innovation activities and directions; on the other hand, they define meaningful goals on a scientific basis that transparently contribute to reach the maximum degree of decarbonization of industry, including limiting the use of fossil resources.

Contribution to the programme and project objectives, output and result indicator, as well as to the targets set for the Priority Area concerned (max. 2000 characters)

The activities and individual steps led - albeit with certain time delays - to the achievement of output O1.2 a guideline on how to develop a circular plastics prototype including demo case factsheets reflecting technology know-how. Therefore, it contributes to the programme priority 1: a more competitive and smarter Danube Region and the to enhance innovation and technology transfer in Danube region and to EUSDR priority area 8: Competitiveness of enterprises.

- Consultation workshops were held in three teams between individual participants (project partners, associated partners and invited SMEs) – these transnational peer level capacity building workshops aimed at sharing know-how and lessons-learnt from piloting the design-thinking workshops (DTWs) and helped to constitute unified approaches to the solution developed in the piloted DTWs and enabled the sharing of the related specific technical information about the chosen approaches.

- At the same time, R&D centers were involved, which guarantee the use of the latest scientific knowledge for individual solutions and thus determine the correctness and innovativeness of the approach.

- Prototyping concepts and demonstration cases included in this output were developed based on the solutions and learnings of the piloted DTWs.

- Although the prototyping phase took place separately in the participating countries, results were consulted between the individual PPs, evaluated and unified into guidelines that can be applied across the board regardless of the country of the project partner.

O1.2 comprises of and contains elements which contribute to the programme priority 1 and to enhance innovation and technology transfer - namely: Circular guidelines

i. reflect the requirements of legislation and scientific knowledge

ii. are consulted and thus ensure a broad and wide dissemination-ability within Danube region

iii. are verified (see prototyping) technically, economically and even pre-define the business potential

How can the output be used and by whom (target group), what is the benefit and the impact for these target groups and the target area / Danube Region? (max. 1500 characters)

Ultimately, O1.2 presents individual guidelines and demo fact sheets in the form that will be further used for dissemination, promotion and implementation within industrial entities focused on plastics processing - including of course all the background such as R&D centers, state administration bodies, associations, etc. These documents (or rather, partial outputs contained in O1.2) will be able to be used by SMEs and other target group actors as specific, concrete and targeted instructions for their own business activities aimed at applying circular principles while meeting the requirements of EU legislation.

At the same time, thanks to the interconnection and consultations of PPs, it can be objectively expected that these procedures and instructions could be applied in a uniform manner. Last but not least, the intensity of cooperation and exchange of experience and information between individual countries of PPs and between individual project partners themselves and their associated partners is gradually increasing.

The project's practical dissemination activities aim at maximizing the benefits that target groups can gain from the project output.

How can the sustainability of the output be ensured and where and to whom is it going to be transferred? (max. 1500 characters)

The project partners are industry associations in individual countries that work and communicate with on a daily basis with target groups and affected partners. Thanks to this, we can rightly expect the success of the use of the outputs quantitatively, but we believe that also qualitatively in the sense of the uniform application of the proposed guidelines.

The project solution also includes monitoring of dissemination activities, thanks to which it is possible to check and demonstrate quantity. Quality will subsequently also be monitored within the sustainability period of the project. It can also be assumed that already at this stage of the project, follow-up bi- or multi-lateral sub-areas of cooperation between project partners and individual countries will be created.