

Call-for-Interest for industrial partners

Project title: Mapping of non-circular end-of-life plastics and identification of strategies to close circularity gaps

Acronym: Map4Plastics

Introduction

To date, only approximately 39% of the collected end-of-life (EoL) plastics are collected for recycling in Belgium. Moreover, when evaluating the fractions that are effectively reused in the form of post-consumer plastics recyclate, only 24% of the collected waste and **only 11% of the effective plastics consumption is recycled**. Hence, there is a substantial imbalance between the potential EoL plastics feedstock availability and the actual plastics recyclates currently available and used in the market. Several factors contribute to this discrepancy, including collection and recycling inefficiencies; the complexity of the waste (mixed and contaminated wastes) resulting in low-quality recyclates; the lag time between production and EoL phases; the loss of plastics for the EU through foreign reuse/waste exports; the lack of a sufficiently large market size that makes additional recycling of EoL plastics economically viable; and the need for detailed insights into compositions and technical hurdles. The importance of each of these factors strongly depends on the specific plastic product and its application area, but the magnitude is seldomly known (as most studies focus on materials that are collected for recycling).

These factors lead to a low plastics recycling rate, resulting in a significant **imbalance between the potential EoL plastics feedstock and the actual plastics recyclate availabilities on the market**. To close this gap, it is **imperative to have sufficient quantitative insights into the currently unrecycled EoL plastics**, including the non-(separately) collected fraction (especially beyond household packaging which has been quite well studied) and into barriers that are hindering a higher plastics recycling rate. This is needed to help defining future recycling strategies.

Ambition

Three knowledge institutions within the **CAPTURE** platform, including **VITO, University of Antwerp,** and **Ghent University**, are combining forces in the COOCK+-project **Map4Plastics** to address the challenges related to the 'lost' or 'non-circular' plastics.

Map4Plastics aims to **collect and centralize the available knowledge from literature, databases, and stakeholder interviews regarding the currently unrecycled plastics for selected product cases**, focusing primarily on Flanders but also including the Walloon region, the Netherlands, Germany, France, and the UK. The project will evaluate waste amounts and characteristics and assess where and why plastics losses occur. Additionally, it will also explore what is known about their recyclability with different mechanical and chemical recycling options, gathered from scientific papers, patents, and

This Call-for-interest is copyrighted by Catalisti vzw and its contents may not be reproduced without the prior written approval of Catalisti. This Request for Partners reflects the status of the proposed project on its date of release and the information contained herein may not be fully up to date or accurate. All information contained herein constitutes valuable information of Catalisti and may not be used for any purposes other than the evaluation of a person's interest in participating in the proposed project.

interviews. Furthermore, it will look to alternative circularity options such as reuse/refurbishment or in a broader sense design-for-circularity and bottlenecks towards such designs. The information will be collected via a heterogeneous consortium of stakeholders, including knowledge institutes, the Flemish spearhead cluster for the chemical and plastics industry (Catalisti), and industry.

A second objective is to **process the gathered information using factor analysis to pinpoint key bottlenecks in terms of circularity**. This analysis will cover aspects like limitations and opportunities for design-for-circularity or product-service models, recyclability of a material, technological availability, technological readiness level, bottlenecks in the plastics recycling process, needed scale, logistic aspects, companies deploying the needed technology, legislation, etc. This exploration will enable a product-technology assessment based on literature and expert judgement aiming to identify strategies that could increase the availability of the selected product cases for recycling, and to assess these routes in a broader value chain perspective aiming to create a decision support framework.

Combined, the project aims to **develop a decision support framework giving insight into the feasibility and needed investments/upscaling efforts to enable the circularity of additional/unused EoL plastics feedstock**. This framework will help companies gain insights into the needed investments/technological potential, while also fostering collaborative follow-up projects between companies and knowledge institutes.

Call

In this COOCK+-project, the consortium is looking for **additional industrial partners to join the industrial advisory board**. The consortium is interested in companies facing challenges or showing interest in non-circular plastics from various perspectives, to contribute insights for the database, value chains, LCA, TEA, and potentially explore follow-up projects. These companies may span across different sectors such as:

- production companies;
- recycling companies;
- waste handlers;
- medical companies;
- pharmaceutical companies;
- logistic companies;
- companies looking for new circular feedstock; and
- ...

When companies take part, they can actively co-steer the project by joining the user committee. These users have the opportunity to present specific cases, advise on activities, and are also the first to be informed of all progress.

Partners operating in the chemical or plastic sector who wish to participate in Catalisti-supported COOCK+-projects, are required to be at least a CONNECT-member of Catalisti. For more information on membership and membership fees, please contact Martijn Roosen (mroosen@catalisti.be, +32 471 33 50 14).

This Call-for-interest is copyrighted by Catalisti vzw and its contents may not be reproduced without the prior written approval of Catalisti. This Request for Partners reflects the status of the proposed project on its date of release and the information contained herein may not be fully up to date or accurate. All information contained herein constitutes valuable information of Catalisti and may not be used for any purposes other than the evaluation of a person's interest in participating in the proposed project.

How do I reply?

Please send an **email before 07/06/2024** to Martijn Roosen (mroosen@catalisti.be, +32 471 33 50 14) with Stef Koelewijn (skoelewijn@catalisti.be; +32 487 67 20 77) in cc, and briefly describe your interest and potential contribution to the project.

This Call-for-interest is copyrighted by Catalisti vzw and its contents may not be reproduced without the prior written approval of Catalisti. This Request for Partners reflects the status of the proposed project on its date of release and the information contained herein may not be fully up to date or accurate. All information contained herein constitutes valuable information of Catalisti and may not be used for any purposes other than the evaluation of a person's interest in participating in the proposed project.