**WP4. Techno-economic assessment - Alternative EoL options**

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**Goal and Scope**

The aim of this work is to present a techno-economic sustainability analysis methodology (TESA) for each major End-of-Life (EoL) route of bio-based products with emphasis placed on bio-based plastics, and to define techno-economic sustainability criteria and indicators for the alternative EoL of post-consumer/industrial bio-based plastics.

The main considerations taken into account were:

- The *prioritised alternative EoL routes* according to the hierarchy of the Circular Economy Package (CEP) (Fig. 1).
- Emphasis placed on the *recirculation potential* of the products of alternative EoL options, in support of the emerging circular bioeconomy (materials recovery options).

**System boundaries**

Figure 1. Prioritised alternative EoL routes according to the hierarchy of the Circular Economy Package (CEP)

**Methodology**

- The development of the techno-economic sustainability analysis (TESA) methodology for the post-consumer and post-industrial stage of bio-based products has been based on three preliminary inventory analysis steps, followed by the definition of TESA principles and the development of techno-economic sustainability criteria and indicators in two further steps.
- The TESA for the EoL of post-consumer/post-industrial bio-based products is verified through its implementation in selected case studies (Fig. 2).

**Results**

**Principle 1:** Techno-economic sustainability of alternative EoL routes

**Principle 2:** Recirculation potential

**Conclusion**

A methodology was developed for the TESA of the alternative EoL routes of post-consumer bio-based products. Criteria and indicators are proposed for each major EoL route.

**References**


**Figure 1.** Prioritised alternative EoL routes according to the hierarchy of the Circular Economy Package (CEP)

**Figure 2.** TESA Methodology

**Figure 3.** Criteria for Principle 1

**Figure 4.** Indicators for criteria of Principle 1

**Figure 5.** Criteria for Principle 2

**Figure 6.** Indicators for criteria of Principle 2