



PUReSmart

**PolyUrethane Recycling Towards
a Smart Circular Economy**

Deliverable

D4.10 Evaluation of the cost of the foam to foam reprocessing in scCO₂

WP4 – Smart Design

Project Information

Grant Agreement n°	814543
Dates	1st January 2019 – 31st December 2022

PROPRIETARY RIGHTS STATEMENT

This document contains information, which is proprietary to the PURESMT Consortium.
Neither this document nor the information contained herein shall be used, duplicated
or communicated by any means to any third party, in whole or in parts, except
with prior written consent of the PURESMT consortium.

This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 814543.

The PUReSmart project results presented reflect only the author's view. The Commission is not responsible for any use that may be made of the information it contains.

PUReSmart RESTRICTED - Under Consortium Agreement, Confidential until Oct 1st 2026.



Publishable Summary

The PURESmart consortium aims to develop a new reprocessing technology targeting to recycle polyurethane (PU) foams back to foams, ideally usable in the same type of applications. This deliverable report comprises the results of the economic evaluation of the re-foaming process using supercritical CO₂ technology.

The most remarkable results showed that, although this technology is a promising alternative to obtain PU foams from elastomers, at the moment, the cost of the foams obtained from this method is not competitive in comparison with the conventional PU foaming process. However, many assumptions have to be made for the moment in terms of production capacity and market interest for recycled products, and more investigation in this field could be the key to upgrade the maturity of this technology, reducing its cost and transforming it into a real alternative to reprocess PU foams at industrial scale.