



InnoVative processing Technologies for bio-based foamed thermoplastics

VITAL is an EU-funded research and innovation project contributing the creation of innovative high efficiency, low-cost processing solutions and key enabling knowledge to achieve commercially viable “Sustainable by Design” approaches based on bio-based thermoplastics (b-bTPs). Adoption of the VITAL outputs across the polymer processing sector, along with the vocational training programme, will therefore make it easier for manufacturers to adopt b-bTPs commercially, achieving a paradigm shift towards bio-based alternatives for cleaner, more climate neutral industrial value chains.

Objectives

- To develop 3 different b-bTPs manufacturing processes across 3 different value chains.
- To develop a digitally optimised mechanical recycling approach for b-bTPs.
- To develop an optimised recycling additives package.
- To develop b-bTP blends with optimised carbon balance.
- To create a database of foamed b-bTPs parameters.
- To create Circular/Sustainable by Design Business Models.
- To up-skill workforce through creating a VITAL “Learning Factory”.
- To industrially manufacture chemically or physically foamed b-bTPs.

Technologies

- Foam Injection Moulding process**
- Creation of unique database of foamed b-bTPs properties
 - Digital Twin with Virtual AI control
- Bead foaming of b-bTPs processes**
- Radio frequency technology
 - Moulding of b-bTPs
- Globally unique 3D foam printing process**
- 3D b-bTPs foam printing
 - Computer model to simulate 3D foaming process

End user applications:



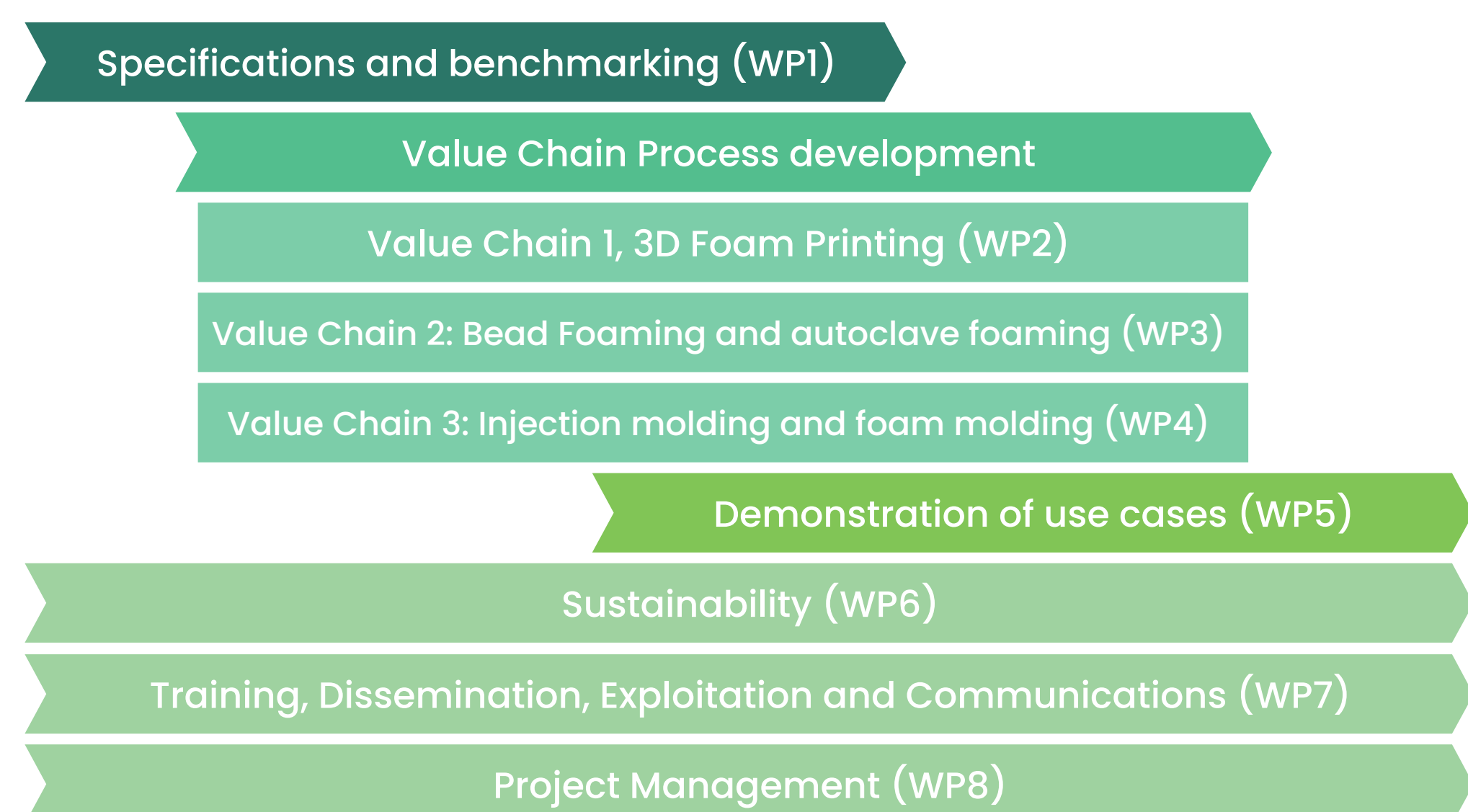
Automotive



Marine



Home Appliances



"This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement N° 101058328"

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