

New bio-based and sustainable <u>Raw</u> Materials enabling Circular Value Chains of High Performance <u>Light</u>weight <u>BioCom</u>posites

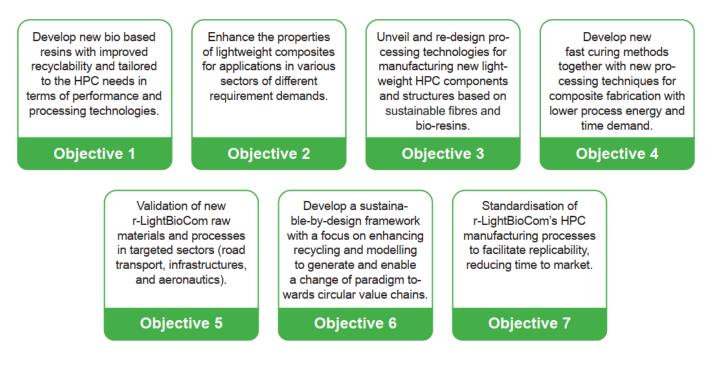
Promoting a paradigm shift

- · in the way high-performance composites are manufactured and recycled
- · from current linear composite value chains to circular ones.

Objectives

The **main objective** of r-LightBioCom is to reduce environmental impact of the new lightweight high-performance composites, not only during their production but also during their operational life and after achieving their final lifetime due to inherent recyclability properties, while providing improved mechanical properties, weight reduction and new functionalities.

In detail:





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Expected outcomes

Material and processing results

- 3 types of advanced bio-based resin compounds
- 4 new additives based on functionalized and reactive biomass-derived nanofillers
- 4-5 new formulations for bio-resins including the bio-additives
- 3 families of sustainable textiles products for HPC components and structures
- 3 sustainable and bio-based types of components for lightweight HPC
- 2 new fast curing technologies

Sustainability results

- New recycling technologies
- · Holistic optimisation tools for sustainable composite structures
- Tools for composite material modelling and validation

Validation will be based on use cases in the sectors:

- a) Automotive
 - 1: Spoiler (exterior)
 - 2: Trunk floor (interior)
- b) Infrastructure
 - Composite pultruded profiles for tunnel lining
- c) Aeronautics
 - Leading edge panel of a control surface



Consortium

Coordinated by AITEX, the project brings together a multidisciplinary consortium consisting of

- 4 research institutions,
- 3 universities and
- 8 industrial partners

from the automotive, aeronautics and construction industry from across Europe.







