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SUSTAINABLE manufacture systems towards novel **BIO-BASED MATERIALS**

What is **GREEN-LOOP**?



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GREEN-LOOP is a project aiming at developing and demonstrating a comprehensive set of innovative, cost-effective, sustainable, green, bio-based products able to substitute traditional materials.

Three value chains will be implemented and three new bio-based products will be produced, aiming for better mechanical, physical and chemical properties compared with conventional materials.



Multifunctional rubber panels with fire resistance and vibrational applications.



Bioplastic bottle closures for oil and fruit juice.



Wood composites bearings for plastic injection machines.

The value chain of each product will be optimised from raw material source to End Of Life of products and all manufacturing lines will be retrofitted to adapt to the new enhanced bio compoundings using Artificial Intelligence.

The **GREEN-LOOP** bio-based products will also contribute to the specific objectives of the **MADE IN EUROPE** Roadmap 2021-2027: in this context **GREEN-LOOP** will represent an example of transition towards green manufacturing technologies, incorporating adapted and novel manufacturing techniques to produce bio-based materials.

GREEN-LOOP benefits

GREEN-LOOP aims at enhancing and supporting the bioeconomy at European level through robust product design adapted to new sustainable and circular schemes, reducing the cost of manufacture and accelerating the market introduction of novel bio-based products.

The innovation potential focus on the techniques required to deliver **GREEN-LOOP**'s vision that include the retrofit of conventional manufacture systems to adapt new bio-based production, electrification of manufacturing systems (microwaves and ultrasound), advanced control with monitoring, artificial intelligence and sustainable designs of final products.

GREEN-LOOP will cover the whole value chain: biomass sourcing, conversion and pre-treatment, disruptive and enhanced bio-based production at industrialization system up to TRL6, end-user testing and finally, next use activities (recycle, refurbish and reuse)

