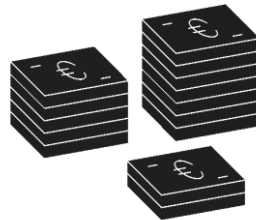


Bio4Products; 4x4, demonstrating a flexible value chain to utilize biomass functionalities in the processing industry

- H2020-IND-CE-2016-17/H2020-SPIRE-2016
- 01-09-2016/31-08-2020



**BIO4
PRODUCTS**
Creating sustainable resources
for process industry



- EC funding : 4.335.393 €



Bio4Product Case Study

1. The EU/ SPIRE needs

Transition from fossil based feedstocks to renewables. SPIRE goal: 20% less non-renewable raw material usage

2. The Project Solution

The approach of Bio4Products is to demonstrate the thermal fractionation of 4 different biomass resources and to demonstrate the use of the fractions in 4 different applications

4. How will this happen?

Bio4Products will substitute the fossil resources (bitumen, phenol, creosote, etc.) by renewable alternatives for the production of roofing materials, phenolic resins, wood preservatives and molding resins. The target is to substitute at least 30% at a TRL of 6-7

3. Value to Customers

Customers will be able to introduce bio-derived feedstocks in their products at competing prices with decreased utilization of fossil resources with improved energy utilization and decrease of CO₂ emissions (all at least 30%).



Bio4Products : Key expected sustainability impacts



Indicator	Baseline	Expected Impact
Demonstration of an overall product yield from biomass	Currently mainly using fossil resources	Yield to products should exceed 50 wt%
Production of 4 end products	Currently mainly using fossil resources	At least 30% of the original (fossil) resources stream is replaced with renewable material and on average for the 4 products more than 50%
Demonstration of the value chain	Currently the value of pyrolysis liquid is based on the heating value	Combined value of the fractions is at least 50% above the current energy value of the pyrolysis liquid
Demonstrate GHG emissions	Use of fossil raw materials	GHG emission saving should be at least 75 % compared to current route



Bio4Products: Possible outputs and learnings for other SPIRE projects

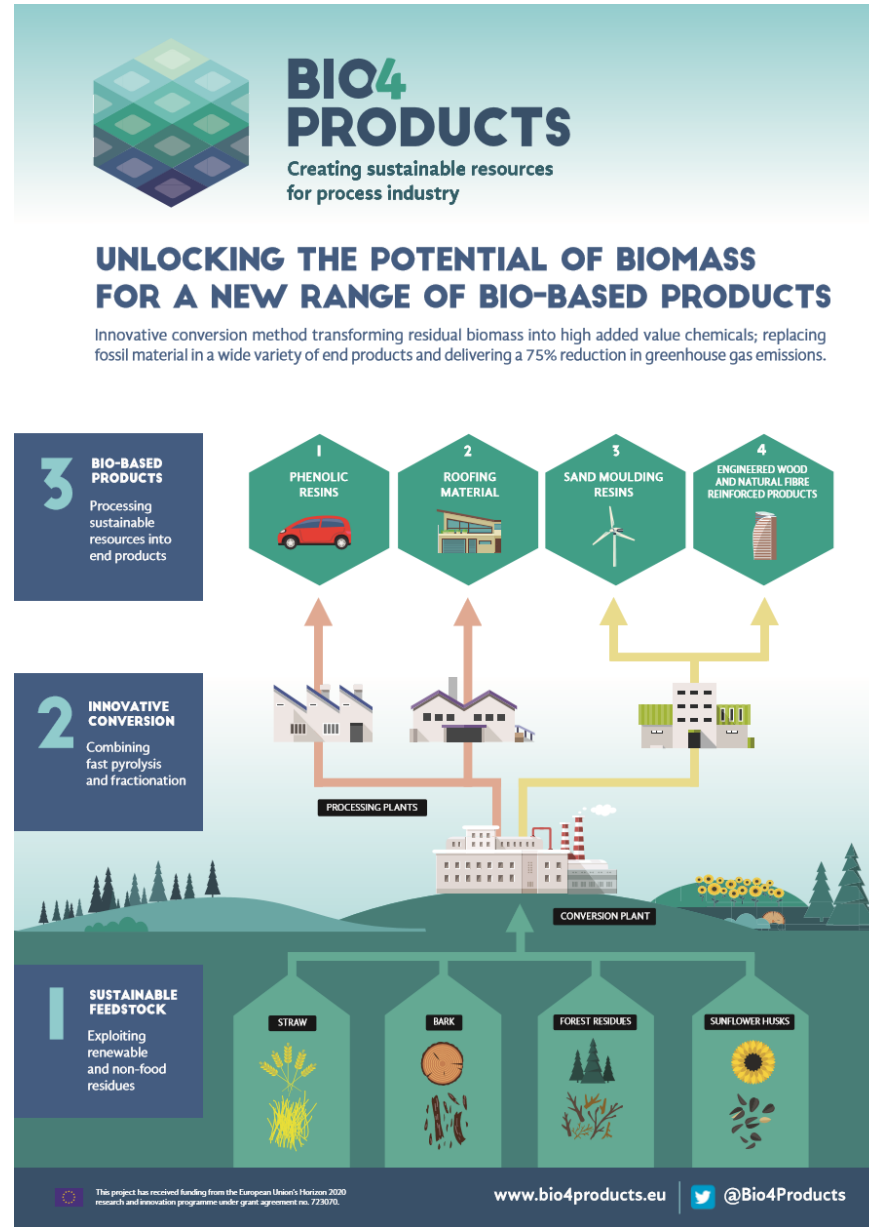
- The innovative approach of the Bio4Products project; applying a short thermal treatment at elevated temperature with a subsequent fractionation step, which is a robust process enabling the unlocking of many types of lignocellulosic biomass (residues) and in this way producing fractions which could be used as replacements for various fossil originating raw materials
- Fractions produced by the Bio4Product project could be suitable in many other applications
- Significant amounts of fractions and products can be made available



The Bio4Products concept:



**BIO4
PRODUCTS**
Creating sustainable resources
for process industry



Coordinator

Bert van de Beld, BTG Biomass Technology Group

vandebeld@btgworld.com

Communication and Dissemination

James Ling, Greenovate! Europe

james.ling@greenovate.eu

www.bio4products.eu

