

Research topic: The use of materials in new technology products (BIOREF1)

- Research line: Resource management for a Circular Economy
- Research group: Sostenipra

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Life-cycle Assessment (LCA) of the different biomass feedstocks and products obtained.

The BIOEFFORMED project aims to boost the sustainable Mediterranean-forest management by promoting a local biorefinery concept capable to produce renewable chemicals and fuels from forest biomass. The objective is to contribute to the development of the bioeconomy helping to accelerate progress towards a circular and low-carbon economy.

To ensure circular strategies are aligned with improved environmental performance of the output products from the biorefinery, life cycle assessment will be used. This will track all energy and material inputs and outputs from a real-case biorefinery plant operated by Energ-bas located in Catalonia within the different final products obtained. Based on this results, further recommendations to improve the environmental sustainability of biorefineries will be given.

Main goal: To environmentally assess a biorefinery plant producing multiple co-products.

MAIN TASKS:

- 1) To perform a literature review about biorefineries.
- 2) To quantify all related inventory flows (energy and materials) of the real-case study of a biorefinery plant.
- 3) To quantify environmental impacts using LCA related with the production process of the biorefinery under different types of forest biomass.
- 4) To give sustainability assessment and further potentials to improve the environmental sustainability of biorefineries.
- 5) To write a peer-review paper for submission in a peer-review journal.