



TIP 2. BIOINDUSTRIES FOR THE DECARBONIZATION OF THE PETROCHEMICAL SECTOR (B4DP)

INDUSTRIAL DECARBONIZATION

TIP: Fostering bioindustries for the decarbonization of the petrochemical sector.

Approximate investment: 0,6M €

Expected economic impact: 1,2M €

References:

- The petrochemical industry produces 1.5 billion tonnes of CO2 annually, accounting for 3% of global emissions.
- Direct CO2 emissions have increased by 41% and must decrease by 12% by 2030 to reach net-zero targets.
- First-generation biofeedstocks compete with food industry demand, so more focus is needed on second- (e.g., animal fats, bio waste) and third-generation feedstocks (e.g., algae, cellulose).

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Main objective

The main objective of B4DP is to promote the development and implementation of biorefineries and bioindustries based on the valorization of local biological and renewable resources, which promote the improvement of profitability and sustainability of the primary sector and the economic diversification, through new value chains that contribute to decarbonizing the petrochemical sector.

Expected results

To achieve it B4DP project has the following lines of action:

- Analysis of the potential of organic-based consumables petrochemical complex companies.
- Update and extension of the characterization of the biomass available in the area of influence.
- Determination of needs linked to recruitment of industries in the agri-food sector (increase the supply of local renewable biological resources)
- Analysis of mature extraction and conversion technologies and of technologies and processes to be applied at origin to ensure a stable supply
- Logistics and storage analyses: identification of communications improvements (Lleida-Tarragona split), availability of pre-treatment equipment and treatment systems at source
- Analysis of the technical, economic, environmental and urban feasibility of the potential of collective valorization facilities.

Justification

From the beginning of the Shared Agenda in 2018, the bioeconomy potential to improve profitability and sustainability of the primary sector and economic diversification has been identified.

The urgent need to decarbonize the current production model does not only mean replacing energy sources of fossil origin with renewable ones. It is necessary a progressive replacement of raw materials produced from petroleum refining with others produced from renewable biological resources in biorefineries and bioindustries. The Tarragona petrochemical center imports more than 1.5 million tons of fossil-based materials annually, which must be gradually replaced by biological materials.

The data obtained from the analysis and characterization of the renewable biological resources of the province of Lleida have been used to estimate the total chemical components available in the whole of the provinces of Lleida, Huesca, Zaragoza, Castellón y Teruel. The results suggest that there are sufficient resources to supply some petrochemical processes, but it is necessary to work with the sector to prioritize and analyze the technical, economic and environmental viability of its production.

Contribution towards

2035 Goals - AC LLEIDA TERRA D'OPORTUNITATS

Biopolygons in operation, with a regulatory framework, developed infrastructure and social acceptance, which allow the implementation of biorefineries and bioindustries that valorize endogenous resources, promote industrial symbiosis, create qualified jobs and are compatible and complementary with agro-food production.

Open access facilities to reduce technological and non-technological risks associated with the new industrial model.

Viable business models at an economic, social and environmental level that value forestry and agricultural ecosystem services, which allow increasing incomes in the primary sector.

SDG

Directly

Indirectly



Shared vision 2050 - AC LLEIDA TERRA D'OPORTUNITATS

Economic Development: By identifying and evaluate new biovalue chains than can promote the implantation of biorefineries and bioindustries.

Sustainability: the new biobased value chains aim to contribute to descarbonization of petrochemical sector and in the same time improve social, economical and environmental sustainability of primary sector Education and Workforce Development: the potential development of biomanufacturing is associated with the creation of qualified jobs.

Transformative Innovation Ecosystem: the knowledge generated by the project will supply the territorial ecosystem of innovation, which will contribute to the development of the project's results.

Improved Quality of Life: Securing the sustainability of the main economic sector of the territory strengthens the basis for the development of the new, complementary value chains, and paves the way for biomanufacturing development.

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