



Territorial biorefineries for circular economy TeBiCE

PROJECT OBJECTIVES

The general objective of the project is setting up of governance tools to harmonise and enhance the framework conditions for a more effective circular economy in the Central Europe area and beyond. In particular, the project is oriented to:

- allow the consolidation and the establishment of new and longer value chains for the recovery of materials and energy from residual biomass from the primary production and agri-food processing sectors (among others, carbon-based waste flows and production of high added-value materials), following a molecular approach;
- introduce new governance tools and business models, supporting the establishment of new value chains by stimulating and boosting the match between companies and industries offering and demanding by-products and waste, as well as by exploring the exploitation of new technological solutions and strengthening existing ones for the End of Waste of waste and the reuse of by-products from the primary production and agri-food processing sectors;
- promote a more harmonised regulatory and organisational scenario, also proposing new End of Waste schemes and encouraging the propension of public and private sector towards the adoption of business model based on circular economy.

PROJECT ACTIVITIES

WP1 – Potentialities for a wider application of circular economy principles for by-products and waste of the primary production and agri-food processing sectors of Central Europe regions

The WP is intended to survey the potentialities of project involved areas in establishing value chains starting from by-products and waste of the primary production and agri-food processing sectors. In particular, the analyses will be conducted to: a) map of territorial potential for value chains; b) survey of best available technologies; c) outline capacity of market to absorb by-products and waste of the primary production and agri-food processing sectors.

The obtained results will be the basis for the capitalisation of the experience of Value Chain Generator Software Tool set up in the AlpLinkBioECO project in two ways: 1) by implementing the Value Chain Generator Software Tool contents for the areas not previously involved, extending therefore the operativity of the tool in the Central Europe area (i.e. including the new actors surveyed in the previous activity); 2) by developing a new module in the Value Chain Generator Software Tool allowing the possibility to link by-products and waste producers with best technological solutions.

Once implemented, the correct functioning of the Value Chain Generator will be assessed by comparing its results to the existing virtuous experiences of biorefineries engaged in circular bioeconomy processes.

The WP lastly foresees involvement activities towards companies and producers of by-products and waste of the primary production and agri-food processing sectors.

Programme output indicator: Jointly developed solutions

WP2 – Pilot actions to define constraints and potentialities for the development of value chains

The WP aims at outlining virtuous circular economy supply chains that could act as flagship chains for the territory, among the ones detected in the previous WP, or brand-new established thanks to the value chain generator tool.

The establishment/consolidation of these chains is moreover ensured, with main reference to new technological/logistics approaches allowing a more intensive and more profitable reuse and recycle of by-products and waste of primary and agri-food sectors. During the pilot action development, a specific assessment on aspects as continuity of biomass production, storage systems and, more in general handling and logistics bottleneck will be done to outline operative measures and solutions. Also, analyses will tackle specifically technological aspects, by providing a clear description in terms of potential adoption of cutting-edge or low TRL technologies for the treatment of by-products and waste of the primary production and agri-food processing sectors during the pilot action development.

The evaluation of the effectiveness of pilot actions is conducted by assessing the impact of the establishment of the new chain (and therefore of new market outlet for by-products and waste) on the companies' ordinary management, comparing the situation ex-ante and ex-post.



Once the pilot actions are concluded and assessed, mainstreaming of project tool and lesson learned will be done towards companies of the primary and agro-food processing sectors to stimulate the replication of experiences

Programme output indicator: Pilot actions developed jointly and implemented in projects

WP3 – Supporting a new regulatory framework for biorefineries in the CE area

Starting from the findings of the pilot actions, the WP aims at preparing and sharing with policy makers the following tools to supporting the establishment of new regulatory framework for biorefineries in the CE area:

- An action plan for technology and logistics foresight focussing on the technological and logistics/handling issues, outlining solutions to spread the exploitation of advanced technologies as well as to overcome logistics and storage constraints, i.e. those allowing to increase the circular streams, but also leading to more efficient and profitable reuse/recycle of by-products and waste;
- Standard and technical rules to standardize the reuse and recycling of by-products and the EoW of specific waste of the of the primary production and agri-food processing sectors, borrowing approaches already developed in manufactural and industrial sector;
- A Regulatory Impact Analysis, i.e. specific assessment on the current legislation, its constraints and on the modalities to uptake the action plan and the standards developed in the current national regulatory frameworks with the general aim of comparing different national legislations and promoting an harmonise framework for circular economy.

Events towards institutions and policy makers to stimulate the policy uptake of project action plan and proposed standard will be organised.

Programme output indicator: Action plan

EXPECTED OUTPUTS/RESULTS

The project is expected to:

- Improve the conditions for an easier application of cutting-edge technology solutions that generally improve the streams of reuse and recycle of by-products and waste of the primary production and agri-food processing sectors of Central Europe regions;
- Improve the scenario and the governance of the market of by-products and waste of the primary production and agro-food processing sectors, better matching producers/users and technology providers to strength the value of reuse and recycling chain;
- Pave the way for a standardization of the various existing legislations at Central Europe level, concerning the the EoW criteria.

PARTNERS INVOLVED SO FAR

- LP – VA: Veneto Agricoltura – Veneto Region’s Agency for Innovation in the Primary Sector (IT) - LP
- PP2: National Institute of Chemistry (SI)
- PP3: Fraunhofer Italia (IT)
- PP4: Chemie-Cluster Bayern GmbH (DE)
- **PP5: Partner from Poland**
- **PP5: Partner from Austria**