

Emilia-Romagna innovation ecosystem and public engagement. Co-design and co-development of living labs for the involvement of citizens and businesses and for the evaluation of regional policies of circular economy

Research project

The Emilia-Romagna Ecosystem of innovation is the project of Emilia-Romagna region to support the ecological transition of the economic and social system of the regional territory, funded by National Recovery and Resilience Plan (Mission 4, Component 2 Investment 1.4, European Union – NextGenerationEU).

In line with regional, national and European strategies, the project was created with the aim of promoting the sustainable growth of the territory by developing innovation and knowledge, attractiveness and internationalization, connected with digital transformation and the person-centered approach.

Emilia-Romagna is based on a diversified and flexible production specialization model that is part of a territory rich in knowledge, skills, services, infrastructure, collaborative networks on research and development, with a strong manufacturing vocation, among the most relevant at European level: with 453,000 employees, manufacturing is worth 30% of total employment, a value well above the national average, which amounts to 22%. The industrial system absorbs about a third (33%) of the final energy consumption of the region, with 4.2 Mtoe of final consumption, of which over 70% consists of natural gas and the remaining electricity. It is increasingly necessary for companies to convert their production cycles into a new dimension of circularity, reducing energy consumption, gradually increasing the use of renewable resources and allowing, at the end of life, recycling and reuse of materials and components.

These challenges require interventions related to infrastructure and plants for the production, transmission and distribution of energy, building recovery and energy upgrading of existing buildings, transformation of the production system for a sustainable economy, development of sustainable materials, extension of the "smart city" to the entire regional territory and the transformation of economic activities towards the circular economy, with particular attention to the sectors of blue growth, tourism and agriculture.

The Ecosystem for the Sustainable Transition in Emilia-Romagna brings together key regional players who want to cooperate to achieve a common vision; the project is coordinated by ART-ER - Società Consortile Attrattività Ricerca Territorio dell'Emilia-Romagna and it consists of the 4 regional universities (Bologna, Modena and Reggio Emilia, Ferrara and Parma), together with the Poli di Piacenza (Politecnico and Università Cattolica di Milano) and the research system (CNR, ENEA, INFN, CINECA and CMCC).

The Innovation Ecosystem is structured around six thematic Spokes and conceives the regional territory as an ecosystem that pursues carbon neutrality, the conservation of natural resources and the environment as well as an innovative, competitive and fair local economy. The Spokes carry out the activities envisaged by the programme, namely research, innovation and technology transfer.

The research work of this project is part of Spoke 5 - Circular economy & Blue Economy. The main objective of Spoke 5 is to consolidate and promote a network of innovators to improve the transformation of economic activities towards the circular economy, with particular attention to the sectors of blue growth, tourism and agriculture, in line with national and European policy objectives. The activities of Spoke 5 are therefore aimed at improving the recovery of material from waste and wastewater in key production sectors for the region such as agriculture, tourism, aquaculture, providing tools to businesses and institutions to minimise any potential negative contribution related to climate change and waste generation.

In order to achieve these objectives, Spoke 5 will implement actions that allow progress towards sustainability, with particular reference to companies engaged in the blue economy and tourism, and will support system innovations by examining convergence between territories on the basis of different economic, social and environmental performance indicators.

These goals will be achieved through mapping activities, design of new tools and services, sustainability assessments and impact measurement, definition of prototypes, creation of living lab and demonstrators, definition of new protocols. Spoke 5 aims to develop innovative tools for corporate governance and brand identity, in the private and public sectors, in line with legal regulations. It also focuses on the study of the impact of environmental policies and green innovation, the competitiveness of businesses and the quality of work (Green Jobs).

Public engagement and the involvement of external stakeholders are keys to the success of the Spoke 5 objectives, in line with the overall vision of the Emilia-Romagna Ecosystem project. In particular, stakeholder engagement activities will aim to establish a synergy between the scientific community and the industrial and social system, to encourage the re-use of research results and to improve the productivity of enterprises, in particular SMEs, and the social capacity to create common value. The activities of the project therefore involve private individuals - large companies, SMEs, start-ups, etc - both as project partners and as members of the living-labs and testers of new prototypes, poc, services and products.

Research activities

In this context, the research work with the other project partners will be a central activity to be carried out considering the strong multidisciplinary nature of the objectives and the results obtainable. The research activity will therefore be divided into the following phases:

- a. preparation of documents and presentations to be shared with the members of the Spoke 5 working group, maintaining a constant flow of information and exchange (via email, conference call, Teams meetings etc);
- b. connecting activities with the partners involved and with the UNIBO working group for facilitating contacts on the territories and collecting the content of the engagement strategy to be adopted; support in the management and organization of the activities planned within the Living Lab (co-design and co-development);
- c. support in the development of programme documents for monitoring and research activities on innovative circular business models and related regional environmental policies; participation in research groups for the construction of indicators to assess the quality and impact of the interventions carried out in the Living Lab at regional level.;
- d. monitoring of the results in collaboration with researchers and professionals belonging to Universities and partner research bodies, drafting of reports and periodic deliverables provided for each project action;
- e. participation in national and international seminars, workshops and conferences; scientific production on the results of the activities planned in the project.