

Lombardy Technology Clusters

AEROSPACE

AGRIFOOD

GREEN CHEMISTRY

ENERGY

MOBILITY

SMART FACTORY

LIFE SCIENCES

TECHNOLOGIES FOR SMART COMMUNITIES

TECHNOLOGIES FOR LIFE ENVIRONMENTS



Lombardy Technology Clusters



UNIONE EUROPEA
Fondo europeo di sviluppo regionale



Regione
Lombardia



CONFINDUSTRIA
Lombardia

POR FESR 2014-2020 / INNOVAZIONE E COMPETITIVITÀ

“A goal without a plan is only a wish” wrote Antoine de Saint-Exupéry. This is the basic idea that guiding Regione Lombardia’s policy on technology clusters, the subject of this publication, for almost ten years.

The objective has been clear from the outset: to encourage the widest possible participation of the territory within regional, national and EU strategies and initiatives, to ensure they have a concrete and positive impact on the competitiveness and well-being of our communities. In order to achieve this objective, the plan has provided for a governance action since 2013/2014 aimed at involving aggregations formed by Lombardy’s research organisations and enterprises, operating within strategic sectors for innovation and competitiveness in the region.

In particular, Regione Lombardia has recognised and financially supported the development of 9 technology clusters at regional level, for the start-up and consolidation phase, with the aim of involving the entire innovation ecosystem and facilitating collaborations and synergies between the various players. This process was carried out in line with national guidelines¹, in connection with the Smart Specialisation Strategy - S3 process at both national and European level and in connection with the European Framework Programme for Research and Innovation.

The 9 Lombardy Technology Clusters (LTCs) recognised by Regione Lombardia bring together almost 700 subjects (including companies, research centres, universities, public and private institutions and other subjects of the Lombardy innovation ecosystem) distributed in all provincial territories and focused on a specific technology and field of improvement.

Over the years, LTCs have become increasingly mature in structuring their governance and have defined strategic development plans with clear medium- and long-term objectives consistent with regional policies supporting research and innovation. The ability of clusters to be inclusive with regard to local stakeholders has thus progressively increased, leading to greater openness towards the outside world in terms of representativeness and services offered to members.

The LTCs were involved and called upon to contribute to increasing Lombardy’s competitiveness and attractiveness at national and international level, by implementing innovative processes in their respective fields of competence.

The 9 LTCs carry out - and will continue to do so - an important action of mapping the competences existing within them - and in the territory - first in the areas of specialisation and now in the ecosystems of innovation identified by the S3 of Regione Lombardia, which they have contributed to define and decline with ideas related to priorities and themes of strategic interest, acknowledged in the “Research and Innovation Work Programmes” which are updated every two years.

¹ Directorial Decree 257/Ric of 30 May 2012 and subsequent amendments and additions.

Clusters are recognised in the S3 approved by Regione Lombardia as strategic players to address challenges and promote good practices in the industrial value chain. The success of S3 lies in its *place-based* approach, where the territorial dimension and the Clusters' collaborative network are fundamental to adapt strategies to the specificities of the regional context, thus improving territorial competitiveness.

In the path from 2014 to today, Confindustria Lombardia has also constantly supported the 9 LTCs. In this respect, the Cluster Technical Committee has been set up to provide support on governance and cluster positioning in the context of national and European policies for internationalisation, innovation and competitiveness.

By sharing their mission with the other players in the Cluster governance, Lombardy companies can access to more innovation and research opportunities in a virtuous circle benefiting not only the supply chain involved, but also the entire regional economic and social system.

Faced with the consequences of the pandemic and the challenges posed by the ecological and digital transition, there is now a need to convert entire supply chains as soon as possible, at the risk of disorientating the industrial fabric. Clusters can contribute by offering opportunities for dialogue to define and implement research projects, as well as the emergence of ambitious innovation initiatives, thanks to their *expertise* and deep knowledge of value chains.

Moreover, today we find a vertical specialisation in the National Recovery and Resilience Plan as a *modus operandi* that therefore allows the Clusters to become the entities entitled to contribute to the development of the missions identified in the plan.

This report aims to highlight the results and growth of the 9 LTCs and at the same time to promote awareness of the added value they create in the Lombardy region through the initiatives undertaken.

Fabrizio Sala

Councillor for Education, University, Research
Innovation and Simplification, Regione Lombardia



Francesco Buzzella

Chairman of Confindustria Lombardia



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LOMBARDY INTELLIGENT FACTORY ASSOCIATION



GENERAL INFORMATION

REFERENCE ECOSYSTEM

Advanced Manufacturing

TECHNOLOGY AREAS

Advanced Manufacturing Technologies

EUROPEAN PROJECTS AND INTERNATIONAL NETWORKS

CEUP 2030 - Interreg, AI Regio - H2020, AdmaTranS4MERS - H2020, Pimap Plus - EASME, ADMANTEX2i - EASME, Eur3Ka - H2020, S34Growth2 - Interreg, DigiFoF - Erasmus Plus, Vanguard Initiative, 4 Motors EU, World Economic Forum, Intelligent Factory Cluster, European Cluster Cooperation Platform, Expert Group on Clusters, I3 Expert Group, network with clusters, intermediaries and regional governments in more than 25 EU regions

HEADQUARTERS

Via Stezzano, 87 - 24126 Bergamo
Via G. Colombo, 83 - 20133 Milano

WEBSITE

www.afil.it/en/



NUMBER OF MEMBERS



SUCCESS STORIES

AFIL partner of Regione Lombardia for Advanced Manufacturing: Circular Economy roadmap coordinated by AFIL and approved by the Regional Council in 2020, Artificial Intelligence roadmap of Regione Lombardia in progress, contribution to the definition of S3 and Work Programmes of Regione Lombardia for Advanced Manufacturing, partner of Regione Lombardia in EU initiatives of interregional policy and international relations (e.g. Business Forum AI Italy - Canada), signatory of the Protocol for Sustainable Development, Circular Economy Observatory and Energy Transition.

AFIL Innovation Accelerator through Strategic Communities (SCs)

AFIL is engaged in activities of consolidation and development of current Strategic Communities (Circular Economy, Additive Manufacturing, Secure and Sustainable Food Manufacturing, Artificial Intelligence and Smart Materials) and also in the development of new ones (e.g. Recycling in the steel sector, Smart Components, Predictive Maintenance, Textiles Recycling, Smart polymers, 5G and Wireless 5G, Batteries for electric vehicles, Cosmetics). Among the success stories created within the Strategic Communities: FiberEUUse, SCREEN, DIGIPRIME, CarE-Service, BeinCPPS, AI Regio, Made4Lo, Watchman and Smart4CPPs.



ONGOING PROJECTS 2022

ADMATrans4MErs - H2020

This project grew out of the previous ADMA project in which AFIL was an active participant. The cluster is mainly involved in two tasks: **dissemination** of the opportunity within its network to involve SMEs and experts in the use of the platform that will be used to carry out **digitalisation assessment scans** and related **implementation plans** for the transition.

AFIL is committed to the implementation of the above through the definition of tools and services for SMEs.

A total of 1.000 SMEs at EU and consortium level will be involved in the scan and its implementation plan. The Open Calls are expected to involve 500 SMEs.

Vouchers will be made available to SMEs to support them in the digital transition.

In addition, there will be vouchers for **"Transf4mers"**, i.e. those who can effectively support SMEs in scanning and drafting the implementation plan.

AI REGIO – H2020



Originating from the Vanguard Efficient and Sustainable Manufacturing (ESM) Network - Digital Transformation, the project promotes the **digital transformation of SMEs through a network of EU Digital Innovation Hubs (DIH)**, involving the Vanguard regions.

AFIL is leader of the Work Package 2 concerning the methodology for the **supervision of the developed use-cases** (description of AS-IS TO-BE scenarios, identification of KPIs, etc.) and actively participates in the Work Package 3 for the definition of the Cluster **services** (e.g. Customer Journey, business models, service portfolio and collaboration scenarios with DIHs from other regions).

In the consortium there are 8 SMEs from different manufacturing sectors, 9 technology providers, 16 DIHs and 4 competence centres. 7 Lombardy actors are directly involved in order to demonstrate regional competences and capacities at European level.

The project promotes collaboration on **Artificial Intelligence**, through the sharing of best practices and the implementation of shared innovative solutions.

Open calls are also an opportunity for stakeholders not part of the project consortium.



SYNERGIES with other regional or national strategies

SMART SPECIALISATION STRATEGY S3

**Advanced Manufacturing
Ecosystem
Connectivity and
Information Ecosystem**

PNRR

Mission 1

Digitalisation, innovation, competitiveness, culture and tourism

Component 2

Digitalisation, innovation, competitiveness in the production system

SMART SPECIALISATION STRATEGY S3

**Advanced Manufacturing
Ecosystem
Connectivity and
Information Ecosystem**

PNRR

Mission 1

Digitalisation, innovation, competitiveness, culture and tourism

Component 2

Digitalisation, innovation, competitiveness in the production system

HIGH TECHNOLOGY CLUSTER AGRIFOOD LOMBARDY



GENERAL INFORMATION

REFERENCE ECOSYSTEM

Nutrition

TECHNOLOGY AREAS

Lombardy's agri-food chain that fosters collaboration between the various players to promote and improve technological development and innovation and to support the competitiveness and growth of the sector

EUROPEAN PROJECTS AND INTERNATIONAL NETWORKS

European Cluster Collaboration Platform, EU4FOOD, Space4Globe, Neptune Blue Growth Accelerator

HEADQUARTERS

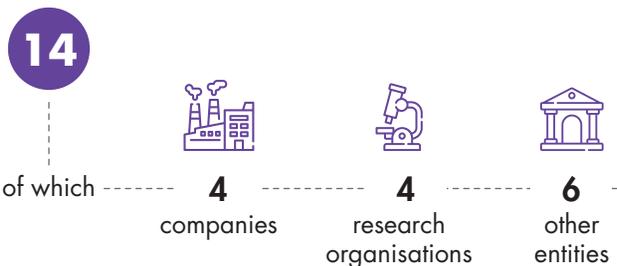
Via Einstein - loc. Cascina Codazza - 26900 Lodi

WEBSITE

www.clusteragrofoodlombardia.eu



NUMBER OF MEMBERS





ONGOING PROJECTS 2022

Call Horizon Europe

Assessing and improving labour conditions and health and safety at work in farming

Preparation of the project proposal related to the Call of the Horizon Europe Framework Programme - Cluster 6 - 2022 - Communities - 01 - 02, with the aim of developing tools to assess and improve **working conditions in the agricultural sector**.

The Call funds projects that promote health and safety in agriculture, equipping the sector with smarter and more innovative solutions that also enhance agricultural work.

Call Horizon Europe

Enhancing biosecurity in terrestrial livestock production

The Cluster is currently working on the submission of a project under the Horizon Europe Framework Programme Call - Cluster 6 - 2022 - Farm2fork - 01 - 03, which aims to develop and validate methods and tools for the prevention and mitigation of **infections on farms** or in **livestock** management sites of various types (cattle, sheep, poultry, etc.).

The measure aims to support Research and Innovation projects that contribute to preventing and controlling infectious animal diseases, thus ensuring **public health** and promoting **sustainable agriculture**.

The call is in line with the European Commission's **Farm to Fork** (F2F) strategy for a transition to fair, healthy and resilient livestock production systems, including the reduction of antimicrobial use.



SYNERGIES

with other regional or national strategies

SMART SPECIALISATION STRATEGY S3

Nutrition Ecosystem

PNRR

Mission 2

Green revolution and ecological transition

Component 1

Circular economy and sustainable agriculture

SMART SPECIALISATION STRATEGY S3

Nutrition Ecosystem

PNRR

Mission 2

Green revolution and ecological transition

Component 1

Circular economy and sustainable agriculture

LOMBARDY MOBILITY CLUSTER



GENERAL INFORMATION

REFERENCE ECOSYSTEM

Sustainable mobility

TECHNOLOGY AREAS

Smart Mobility and Architecture

EUROPEAN PROJECTS AND INTERNATIONAL NETWORKS

Participation in numerous European projects (COSME, Horizon and LIFE), EUSALP, Four Motors of Europe, European Clean Hydrogen Alliance (ECH2A), Clusters for the City of the Future (C2Future)

HEADQUARTERS

Via Cefalonia, 60 - 25124 Brescia

WEBSITE

www.clusterlombardomobilita.it/EN



NUMBER OF MEMBERS

83

of which



70
companies



4
research
organisations



9
other
entities



SUCCESS STORIES

CLM's projects, also at national and European level, cover various areas, in particular: motorsport, vehicle lightweighting and new materials (see CLM notebook), alternative drives (hydrogen, methane/bio-methane, electric), sensors and new technologies (digitalisation, Artificial Intelligence (AI), etc.).

Successful projects have been developed in each area, leading to the development of new product and process technologies.

Noteworthy are the recent projects on electric traction (Hyper and Improves), methane (DualNG) or hydrogen (Shine) and that of the on-board sensors - Artificial Intelligence (Road Safety).



Clusters for the City of the Future (C2Future) is a project co-funded by the COSME programme whose objective is to create and support a strategic partnership between 6 European Clusters, supporting

SMEs in internationalisation and targeting third country markets such as USA, Canada, Mexico, Colombia and Algeria.



ONGOING PROJECTS 2022

SHINE

Sustainable Hydrogen In New Mobility and Energy management



The project is leading to the realisation of a 'demonstrator' that, using the electricity produced by a hydroelectric power station, produces '**green hydrogen**' at a 'multifunctional' fuel station, where two city buses in service in Brescia will be powered. The aim is to test the development possibilities of the **hydrogen chain**

and its components in a medium-sized context with the possibility of extension and replication in various fields, so as to spread knowledge and experience on the use of hydrogen. This highly replicable project has been included in a list of European projects worthy of support (European Clean Hydrogen Alliance Projects).

1AI@EDGE

The project concerns the development of future 5G networks powered by Artificial Intelligence (AI). The study of driving simulator, traffic management at roundabouts with the presence of automated and connected cars, i.e. cars driven by humans, is underway at the Politecnico di Milano.

Road Safety

The project, which is nearing completion, has developed, with the support of Artificial Intelligence algorithms, a **sensor** and **image collection system** for monitoring **road infrastructure** and the surrounding area.

The value of the project lies in the innovative use of the **vehicle** which, from being an "object in transit", becomes the **interpreter of a territory**, providing important data for various subjects (local authorities, infrastructure managers, insurance companies) and for citizens (road safety and quality of traffic).

This project was funded within the **MoSoRe@Unibs** (Sustainable and Resilient Mobility) **project**, financed by the Regione Lombardia's **Call Hub Research and Innovation**.



SYNERGIES

with other regional or national strategies

SMART SPECIALISATION STRATEGY S3

Smart Mobility and Architecture Ecosystem Sustainability Ecosystem

PNRR

Mission 2

Green revolution and ecological transition

Component 2

Renewable energy, hydrogen, grid and sustainable mobility

SMART SPECIALISATION STRATEGY S3

Smart Mobility and Architecture Ecosystem Sustainability Ecosystem

PNRR

Mission 1

Digitalisation, innovation, competitiveness, culture and tourism

Component 2

Digitalisation, innovation and competitiveness in the production system

Mission 4

Education and research

Component 2

From research to enterprise

LOMBARDY LIFE SCIENCES CLUSTER



Cluster lombardo
scienze della vita



GENERAL INFORMATION

REFERENCE ECOSYSTEM

Health and Life Science

TECHNOLOGY AREAS

Medical Devices, Digital Health, Health and Wellness, Pharmaceuticals, Biotechnology

EUROPEAN PROJECTS AND INTERNATIONAL NETWORKS

Digital Innovation Hub (EDIH), European Union of Private Hospitals (UEHP), Council for European BioRegions (CEBR)

HEADQUARTERS

Via Pantano, 9 - 20122 Milano

WEBSITE

www.lombardialifesciences.it/en/



NUMBER OF MEMBERS

110

of which



61

companies



38

research
organisations



11

other
entities



SUCCESS STORIES

Support for the Regione Lombardia's **Call Hub Research and Innovation**: among the 33 projects eligible for funding, 11 fall within the Health and Life Science Ecosystem and all the lead partners are members of the Lombardy Life Sciences Cluster. In addition, to support the partnership building phase, also supports the communication and dissemination phase over time.

Development of a document, thanks to the activities of the Working Group, dedicated to the topic of **clinical biobanks** that highlights the need for an analysis of the current state and what would need to be implemented.

A dedicated dialogue has been opened with Regione Lombardia, with the support of the Regional Foundation for Biomedical Research (FRRB), which is working on a decree on the subject.

Digital Health Working Group in close connection with what is done within the Council for European BioRegions (CEBR), with the main health clusters and bioregions at European level.



ONGOING PROJECTS 2022

Digital Smart Fluidics - Digital Fluidics for the Life Sciences



The project aims at the realisation of a **standardised and enabling fluidic platform** for the development of biomedical devices and equipment for **hospital and home infusion**. The platform is intended to be based on miniaturised components that are highly accurate and reliable, remotely controllable, totally silent and disposable. In particular, remote control will foster the development of devices to support the **monitoring and administration of parenteral and enteral therapies**, as well as **drug administration**.

Smart&Touch-ID



The project, financed by Regione Lombardia (POR-FESR 2014-2020), aims to create a hub for the creation of **innovative rehabilitation systems**. The SMART&Touch-ID HUB operates by launching **challenges** in which the worlds of **rehabilitation** and **technological development** can work together to create and validate technological solutions (from wearable devices to persuasive games to digital solutions at various levels of immersiveness) to be integrated into the care pathways of **people suffering from chronic non-communicable diseases**.

Life sciences networking activities

Meet in Italy for Life Sciences - MIT4LS, an annual event that facilitates



networking between the various bodies active in the life sciences sector through a platform provided by the Enterprise Europe Network (EEN).



Events/workshops dedicated to Cluster Members to facilitate knowledge and the emergence of common projects, then developed with dedicated subgroups, also to facilitate/support technology transfer as done, for example, with the NEMO Lab project, the first technology hub for the development of innovative solutions for patients with motor disabilities and/or high care complexity.



Collaborations with EU and international actors to increase the possibilities for Cluster Members to find partners. In particular, the Cluster has signed a Memorandum of Understanding with BioCubaFarma to foster research and innovation in the sector through cooperation and exchange of know-how. The Memorandum represents the starting point for new opportunities for joint development in the life science sector, in areas ranging from precision medicine to experimental oncology, from the formulation of molecules for immunotherapy, genetic vaccines and diagnostic, prognostic and radio-exposure markers.



SYNERGIES with other regional or national strategies

SMART SPECIALISATION STRATEGY S3

Health and Life Science Ecosystem

PNRR

Mission 6

Health

Component 1

Proximity networks, facilities and telemedicine for territorial health care

SMART SPECIALISATION STRATEGY S3

Health and Life Science Ecosystem

PNRR

Mission 4

Education and research

Component 2

From research to enterprise

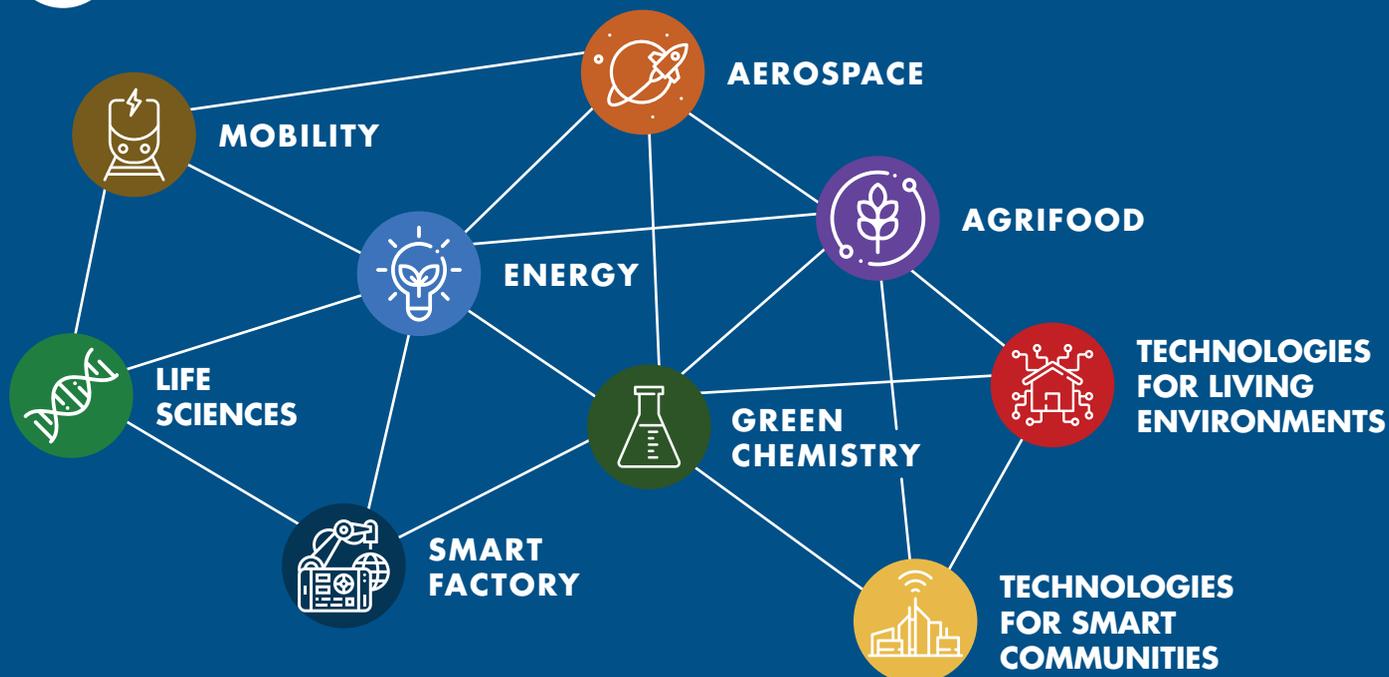
9 Lombardy Technology Clusters

"Clusters are geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition"

M. Porter



TECHNOLOGICAL AREAS





GOVERNANCE



Regione Lombardia has encouraged the creation of the 9LTCs in order to foster the **aggregation** between research and industry.



The **European Commission** considers Clusters as key actors to stimulate **innovation** and promote **scale up** of SMEs.



Confindustria Lombardia supports the 9LTCs in governance and lobbying activities on national and European policies and measures.



NUMBER OF MEMBERS

755

of which

555

COMPANIES

109

RESEARCH ORGANISATIONS

91

OTHER ENTITIES



LINES OF ACTION



Privileged relationship with Region



System actions with the territory



Support for SMEs



Catalysts of public funds



Innovation accelerators



International networking

LOMBARDY CLUSTER FOR TECHNOLOGIES FOR LIVING ENVIRONMENTS FOUNDATION



**CLUSTER TAV
TECH FOR LIFE**
CTL TECNOLOGIE PER
GLI AMBIENTI DI VITA



GENERAL INFORMATION

REFERENCE ECOSYSTEM

Health and Life Science

TECHNOLOGY AREAS

Health and Well-being, Digital Health, Personalised Medicine, Rehabilitation, Nutrition, Active Ageing, Health Tourism & Sport, Future Environments of Life

EUROPEAN PROJECTS AND INTERNATIONAL NETWORKS

Medtech4Europe project: Optimizing the impact of public policies in favour of research and innovation facilities in the field of medical technologies - Interreg Europe, Project Healps2, Healing Alps: Tourism based on natural health resources for the development of Alpine regions - Interreg Alpine Space, Vanguard Initiative - Pilot "Smart Health" (guests), EUSALP (EU Strategy for the Alpine Region) - AG2 and Health Tourism, EIP AHA

HEADQUARTERS

Viale Tonale, 28/30 - 23900 Lecco

WEBSITE

cluster.techforlife.it



NUMBER OF MEMBERS

39

di cui



19
companies



12
research
organisations



8
other
entities



SUCCESS STORIES

Creation of a stable and fruitful collaboration between SMEs and research institutes/IRCCS: technical and scientific collaboration between the company **Astir Srl** (technical innovator), **IRCCS Don Carlo Gnocchi** (clinical and scientific aspects) and the **Cluster** itself (communication and dissemination support). This partnership, which is enabling the **development of a technological solution for cognitive rehabilitation at home that is soon to be launched on the market (RICORDO project - Tech Fast 2021)**, was born within the TAV Cluster and in the context of various calls and working groups (ABILITY in 2014 and ReAbility in 2016 - POR FESR 2014-20) and continues with projects still underway (Call Hub - SMART&Touch-ID in 2020 and RICORDO - Tech Fast 2021).

Innovative partnerships: Cluster TAV supported the establishment of the **consortium** and the **presentation** and to date **dissemination of the sPATIALS3 project - Regione Lombardia's Call Hub**, considered **best practice** as the TAV Cluster facilitated the inclusion of 4 clinical institutions (including 2 IRCCS) within the Hub, thus creating the basis for the collection of specifications, design and implementation of clinical trials.

Fair: Everyone at the Cluster stand. For 7 consecutive years, the Cluster hosted partners at the SMAU Milano stand (and not only), to propose products/services/prototypes and disseminate projects, managing logistics and communication, promoting meetings (intra and extra Cluster), winning prizes with partners' projects.



ONGOING PROJECTS 2022

Medtech4Europe

Optimising the impact of public policies in favour of research and innovation facilities in the field of medical technologies - Interreg Europe

The project, which involves 9 international partners, aims at **optimising and updating regional policies in favour of RDI (Research, Development and Innovation) infrastructures and structures in the MedTech sector**, thanks to the experiences and success stories of the different European project partners, in order to produce new products and services that meet the identified needs in the health sector.

Cooperation with the Province of Limburg (Netherlands) is ongoing, with **bilateral meetings** aimed at identifying areas of common interest with a view to research projects, business and researcher exchange programmes.

The TAV Cluster will host the **final event of the Medtech4Europe Project**, scheduled for **June 2022 in Milan**, with **international partners and stakeholders** for **about 150 people**.

HEALPS2

Healing Alps: Tourism based on natural health resources for the development of Alpine regions - Interreg Alpine Space

The project aims to **provide a set of technological and policy solutions to facilitate the development of health tourism**.

Therefore, the project, which involves a partnership of 11 international policy makers, will provide the regions with knowledge in the field of health tourism, as well as a technological tool for analysing and implementing potential new services.

The project will focus on technology and knowledge transfer between the different sectors, tourism, health, research and all the actors that can contribute to the creation of health tourism services centred on natural resources.

The Lombardy partnership, with the support of the Cluster and Univerlecco, will host **the final project event**, spread over three days in **May 2022**, with the participation of between **120 - 150 guests from abroad and neighbouring regions**, in the Lecco area.



SYNERGIES with other regional or national strategies

SMART SPECIALISATION STRATEGY S3

**Health and Life Science
Ecosystem
Social Development
Ecosystem
Connectivity and
Information Ecosystem**

PNRR

Mission 6

Health

Component 1

Proximity networks, facilities and telemedicine for territorial health care

Component 2

Innovation, research and digitisation of the National Health Service

SMART SPECIALISATION STRATEGY S3

**Health and Life Science
Ecosystem
Social Development
Ecosystem
Connectivity and
Information Ecosystem**

PNRR

Mission 1

Digitalisation, innovation, competitiveness, culture and tourism

Component 2

Digitalisation, innovation and competitiveness in the production system

Component 3

Tourism and culture 4.0

CLUSTER OF TECHNOLOGIES FOR SMART CITIES & COMMUNITIES - LOMBARDY



GENERAL INFORMATION

REFERENCE ECOSYSTEM

Health and Life Science, Culture and Knowledge, Connectivity and Information, Smart Mobility and Architecture, Sustainability, Social Development

TECHNOLOGY AREAS

Digital Systems

EUROPEAN PROJECTS AND INTERNATIONAL NETWORKS

Smart Cities Tech, European Cluster Collaboration Platform

HEADQUARTERS

Via Giovanni Durando, 38 - 20158 Milano

WEBSITE

www.clusterscclombardia.it



NUMBER OF MEMBERS

72

of which



52
companies



8
research
organisations



12
other
entities



SUCCESS STORIES



Smart City Now (SCN), organised by the SCC Cluster, is an annual event, now in its fifth year, involving numerous stakeholders from the business world, regional institutions and local authorities, research centres and universities.

The focus of SCN is to bring to the public's attention the issues that concern the complex world of Smart Cities with examples, success stories and best practices.

In the 2021 edition, organised online, more than 500 participants attended sessions dedicated to energy, mobility, networks and security.



ONGOING PROJECTS 2022

SAMBA

Smart and Advanced Multitenants Buildings Automation



The initiative, conceived by the company Alchemia, is a Research & Development project financed by Regione Lombardia under the **Call Hub Research and Innovation**.

SAMBA proposes the digital transformation of the country's existing building stock by installing **a network of Internet of Things (IoT) sensors inside a building** to monitor microclimate parameters, space occupancy, seismic analysis and certain actuators (for lighting and Heating, Ventilation and Air Conditioning - HVAC).

All data collected is transmitted and stored in the cloud network infrastructure and then processed in order to implement Artificial Intelligence algorithms. In this way, the building can 'self-learn', declining the concept of **Machine Learning into Building Behaviour Learning**.

SAMBA's front ends include the **building's digital twin**, which allows users to browse immersively inside the building, search for specific spaces, interact with smart objects and simulate critical events (e.g. fires and earthquakes) for staff training purposes.

Innovation Hub & Living Lab Network



The project, financed by the **Call Hub Research and Innovation** and now in its final year, is creating an Innovation Hub and a network of Living Labs in Lombardy with the aim of designing, developing and collecting data to **improve the quality of life** of citizens in Lombardy and beyond.

The partners have set up and made a **technological platform** available to carry out experimental validation sessions of new technologies within the associated Living Labs.

The project has therefore developed an initial set of innovative services available to public administrations and local stakeholders for concrete applications to be offered to their citizens, such as, for example, the **monitoring of the elderly**, the **carrying out of physical activity and the connection with urban services**, services for **welfare** and for the improvement of **eating habits** in the working context, services to improve the adherence to **pharmacological prescriptions**, services for **safety** inside and outside **living environments**, as well as the **comfort and safety of buildings**.

The SCC Cluster acts as a provider for all partners, as the manager of the Innovation hub, as the activator of the ecosystem, as the designer of the business model, as well as being the executor of some communication and dissemination activities.



SYNERGIES

with other regional or national strategies

SMART SPECIALISATION STRATEGY S3

Health and Life Science Ecosystem

PNRR

Mission 1

Digitalisation, innovation, competitiveness, culture and tourism

Component 2

Digitalisation, innovation and competitiveness in the production system

SMART SPECIALISATION STRATEGY S3

Smart Mobility and Architecture Ecosystem

PNRR

Mission 1

Digitalisation, innovation, competitiveness, culture and tourism

Component 1

Digitisation, innovation and security in PA

LOMBARDIA AEROSPACE CLUSTER



GENERAL INFORMATION

REFERENCE ECOSYSTEM

Smart Mobility and Architecture, Connectivity and Information

TECHNOLOGY AREAS

Aerospace

EUROPEAN PROJECTS AND INTERNATIONAL NETWORKS

European Aerospace Cluster Partnership (EACP), European Digital Innovation Hub (EDIH), Network of European Regions Using Space Technologies (NEREUS)

HEADQUARTERS

Piazza Monte Grappa, 5 - 21100 Varese

WEBSITE

www.aerospacelombardia.it/en



NUMBER OF MEMBERS



SUCCESS STORIES

Technological topics: paths on Industry 4.0, Additive Manufacturing, Space Economy, Circular Economy.

Supply chain: e-scouting platform, certification route, Lean Manufacturing, KPIs, contracting, product assurance, Industrial Performance and other customised routes for SMEs.

Internationalisation: collective participation in international trade fairs, international growth of SMEs, preliminary assessment of the internationalisation capacities of the sector towards the US market, creation of value propositions.

Business networking: creation of mini-missions for SMEs using a Cluster2Cluster model (Switzerland, Baden Württemberg, Poland, Auvergne-Rhône-Alpes, etc.).

Training: focus on Technical Institutes and Universities for support in company internships, company training, Memorandum of Understanding with local institutions, agreements for the placement of undergraduates and graduates in Cluster companies.



ONGOING PROJECTS 2022

2026 Olympics project

The aim is to develop **mobility** and **safety** initiatives. In terms of mobility, the focus is on **Advanced Air Mobility** (AAM), which includes not only traditional vertical helicopter flight, but also **Urban Air Mobility** (UAM) through the use of innovative aircraft, hybrid-powered aircraft, green fuel aircraft and full electric aircraft.

For the security of the event, a control system for the management of satellite data is foreseen to allow the monitoring of the event sites, also through the use of space technologies.

The LAC aims to act as a **“link”** between the Lombardy Aerospace Sector, Regione Lombardia, the Metropolitan City, the Municipality of Milan, the Milan-Cortina Foundation and the variety of players involved in order to empower the various procedures for linking programming, both for the success of the events and to achieve lasting legacies.

About 20 member companies will be involved, plus reference bodies for the sector (e.g. ENAC, ENAV). The Cluster will ensure coordination, providing its own staff; companies and universities will develop research and implementation projects.

The project is coordinated with ENAC’s Advanced Mobility development plan, with which Regione Lombardia recently signed a **collaboration agreement** on 20 January 2022 on **Advanced Air Mobility**.

Internationalisation and Business Networking activities

Organisation of the joint participation of the Cluster and its member companies in **international trade fairs** and **B2B exhibitions**.

About 60 member companies participated in at least one B2B trade fair or exhibition with the Cluster, totalling over **300 participations**.

In particular, the participation in the following initiatives is planned for 2022:

- trade fair and business networking - Rotors Switzerland (Switzerland, Payerne) from 7 to 8 February;
- B2B exhibition - Aerospace & Defence Meetings (Poland, Rzeszow) from 10 to 12 May;
- showroom - Farnborough International Airshow (UK, London) from 18 to 22 July;
- business networking - outgoing mission to the Czech Republic, presumably early October;
- B2B exhibition - Aeromart Toulouse (France, Toulouse) from 29 November to 11 January 2023.

Planning and organisation of **Cluster2Cluster meetings** with the participation of SMEs from both sides, development of contacts with cross-sectoral Clusters. **About 30 member companies were involved.**



SYNERGIES with other regional or national strategies

SMART SPECIALISATION STRATEGY S3

Smart Mobility and Architecture Ecosystem Connectivity and Information Ecosystem

PNRR

Mission 3

Infrastructure for sustainable mobility

Component 2

Integrated logistics intermodality

Mission 4

Education and research

Component 2

From research to enterprise

SMART SPECIALISATION STRATEGY S3

Smart Mobility and Architecture Ecosystem Connectivity and Information Ecosystem

PNRR

Mission 4

Education and research

Component 2

From research to enterprise

LOMBARDY ENERGY CLEANTECH CLUSTER



GENERAL INFORMATION

REFERENCE ECOSYSTEM

Sustainability

TECHNOLOGY AREAS

Water Energy Nexus - water management and purification, Smart Energy Systems - energy production and distribution, Green Building, Sustainable Manufacturing, Clean Air, Circular Economy

EUROPEAN PROJECTS AND INTERNATIONAL NETWORKS

R-ACEs (Horizon 2020), EU Techbridge (COSME), ESECA (COSME), Vanguard Initiative, European Cluster Collaboration Platform (ECCP), S3 Partnerships of European Regions (ESPC), close cooperation with Digital Innovation Hub (DIH), Enterprise Europe Network (EEN) and Cluster Tecnologico Nazionale Energia (CTNE)

HEADQUARTERS

Via Pantano, 9 - 20122 Milano

WEBSITE

energycluster.it/en



NUMBER OF MEMBERS

144

of which



109
companies



12
research
organisations



23
other
entities

SUCCESS STORIES



“Emerging and Priority Micropollutants” Working Group (GdL-MIE) – 2018, ongoing

At the beginning of 2018, LE2C set up - with the support of Regione Lombardia - the GdL-MIE with the aim of surveying the state of the art of knowledge on the presence, diffusion etc. of emerging micropollutants in Lombardy waters. In this way, LE2C has contributed to the **definition of management strategies for the protection of the environment**, facilitating in the medium term the implementation of actions to contain the spread of pollutants and technological innovations in water treatment, stimulating collaboration between research sectors and universities and with companies in the sector in line with the Intelligent Specialisation Strategy (S3).



The research work of the GdL-MIE was collected in the **Report** published under the title “Emerging Pollutants” in September 2020. The Working Table in 2021 resumed work on the **second phase** of the project in which the management of the spread of micropollutants will be addressed in more detail **micropollutants e microplastics** in the Lombardy aquatic environment.



ONGOING PROJECTS 2022

FANGHI

Advanced forms of sewage sludge management in an innovative Lombard hub



FANGHI (2020 - 2022) is a **circular economy** project born within the working tables of the Cluster, among the winners of the Regione Lombardia's **Call Hub Research and Innovation**, 4th in the ranking out of 78 projects submitted.

The FANGHI Hub proposes an integrated approach of knowledge and technological expertise for the development of new **sewage sludge treatment technologies** to optimise energy and raw material recovery.

The experiments are aimed at identifying the most advantageous single or combined sludge valorisation strategy in terms of health, environmental, energy and economic sustainability.

The partners in the FANGHI project are A2A Ambiente - lead partner - Brianzacque S.r.l., Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Lariana Depur S.p.A., MM S.p.A, TCR Tecora S.r.l., all members of the Lombardy Energy Cleantech Cluster.

R-ACES

fRamework for Actual Cooperation on Energy on Sites and Parks



Funded by the Horizon 2020 programme, R-ACES (2020-2022) aims to facilitate the implementation of **energy cooperation, heat recovery** and **heat exchange** in European industrial parks with **high energy potential**.

The project aims to support industrial areas to become **Eco-Regions** capable of reducing energy consumption by at least 10%, promoting the **transition to a circular economy model** based on **industrial symbiosis**.

To achieve this goal, **three tools facilitating energy exchange** have been developed within R-ACES: a self-assessment tool, a legal tool for energy cooperation contracts and an intelligent energy management platform.

LE2C is working on the creation of the **Eco-Region in Lombardy** by identifying energy-intensive industries and supporting the production system in the application of tools to help the identified companies **manage and optimise** their internal processes.



SYNERGIES

with other regional or national strategies

SMART SPECIALISATION STRATEGY S3

Sustainability Ecosystem

PNRR

Mission 2

Green revolution and ecological transition

Component 1

Circular economy and sustainable agriculture

SMART SPECIALISATION STRATEGY S3

Sustainability Ecosystem

PNRR

Mission 2

Green revolution and ecological transition

Component 2

Renewable energy, hydrogen, network and sustainable mobility

Component 3

Energy efficiency and building rehabilitation

Mission 4

Education and research

Component 2

From research to enterprise

LOMBARDY GREEN CHEMISTRY ASSOCIATION



GENERAL INFORMATION

REFERENCE ECOSYSTEM

Sustainability

TECHNOLOGY AREAS

Sustainable Chemistry, Biorefineries, Bioeconomy of the Future

EUROPEAN PROJECTS AND INTERNATIONAL NETWORKS

Ardia-NET, HempClub, Vanguard Initiative, EU Strategy for the Alpine region (EUSALP), European Cluster Collaboration Platform

HEADQUARTERS

Piazza della Trivulziana, 4/A - 20126 Milano

WEBSITE

www.chimicaverdelombardia.it/en/



NUMBER OF MEMBERS

50



SUCCESS STORIES

Bioeconomy Dialogues (BD) are events organised by the LGCA Cluster to highlight and promote relationships between universities, research centres and companies.

BDs are an opportunity for all bioeconomy actors operating in the Lombardy region to meet, exchange ideas and information, with the aim of creating a development plan and encouraging cooperation between the bioeconomy players.

BDs are initiatives that take place periodically throughout the year and address different topics related to the bioeconomy in rotation.

The initiative was launched in 2018. Some ten Bioeconomy Dialogues have already been organised, two of which have been held at international level.



ONGOING PROJECTS 2022

ARDIA-Net

Developing an Alpine Space Research, Development and Innovation Area by lowering barriers for cross-regional cooperation



Project financed by the **Interreg Alpine Space** programme involving 7 Alpine states and aiming to develop an interregional ecosystem of cooperation based on S3 priorities in the **bioeconomy** sector.

ARDIA-Net aims to build a research, development and innovation area that supports the Alpine regions in **synchronising funding frameworks** by connecting the S3.

The project fosters macro-regional cooperation in the area of **circular bio-economy** and **health economy**, developing industrial projects towards the commercialisation of new sustainable products and services.

The ARDIA-Net partnership is actively involved in the implementation of innovation governance tools and the development of a macro-regional strategy to increase the **social, environmental and economic impact of bio-economy**.

BIOMASS HUB

BIOMethane for a Sustainable Society: development of an Italian laboratory of Circular Economy from biomethane



The project, financed by Regione Lombardia in the context of the **Call Hub Research and Innovation**, involves the LGCA and LE2C Clusters and 8 public and private organisations in Lombardy.

BIOMASS HUB is fully in line with regional policies on **Eco-Industry** and **competitiveness of the waste treatment sector**, through the implementation of circular processes and the setting up of pilot plants for the generation and distributed management of energy for the creation of an integrated and multifunctional HUB for the development of the **Waste-Treatment and Green Energy** sector, combining the need for innovation in the **waste-management supply chain**, through the synergy between renewable energy and green chemistry.

The project involves the creation of a **biorefinery** for the integrated production of biofuels, biomethane, energy, fertilisers and biomaterials.

It will ensure strong economic, social and environmental spinoffs through the development of highly innovative technologies, affecting both regional territory and regional and national policy.



SYNERGIES with other regional or national strategies

SMART SPECIALISATION STRATEGY S3

Sustainability Ecosystem

PNRR

Mission 2

Green revolution and ecological transition

Component 1

Circular economy and sustainable agriculture

SMART SPECIALISATION STRATEGY S3

Sustainability Ecosystem

PNRR

Mission 2

Green revolution and ecological transition

Component 1

Circular economy and sustainable agriculture

Component 2

Renewable energy, hydrogen, grid and sustainable mobility

Co-design for the development of Lombardy

For Regione Lombardia, research and innovation are a pillar for the sustainable and prosperous growth of its territory. They permeate the entire spectrum of activities in the area - industrial, scientific and academic, human capital development, laboratories and infrastructure, citizens' activities, services and organisation - that can boast excellence in various fields in Lombardy.

In the current difficult economic and social context, subject to changes and upheavals caused first by the Covid-19 pandemic and now also by the Ukraine-Russia crisis, the primary objective of Regione Lombardia is to guarantee the multiple transitions that will have to be faced in a fair and governed manner, to allow the recovery and progressive development of its territory.

Strategic planning for recovery must include a renewed focus on economic, social and environmental resilience, with a strong emphasis on integration between international, national and regional planning. The interventions and measures to be launched in the short and medium term will continue to be aimed at boosting the competitiveness of businesses, increasing the wellbeing of citizens, supporting internationalisation, strengthening the ability to attract foreign investments, enhancing research and supporting innovation in line with the **Regional Strategy for Smart Specialisation in Research and Innovation 2012-2027** (Smart Specialisation Strategy - RIS3) - approved by DGR no. XI/4155 of 30 December 2020¹. Good governance of RIS3 is an enabling condition for European regions to use the R&I resources of the European Regional Development Fund (ERDF).

The implementation of the Strategy in the Lombardy territory is carried out through its operational tool - the **RIS3 Work Programmes for Research and Innovation**, which encapsulate the technological priorities, the expected impact and how the Lombardy R&I system works towards achieving the Agenda 2030 objectives.

A well-structured and multilevel governance has been ensured for the definition of both RIS3 and the Work Programmes, a necessary requirement for the implementation of RIS3. Following the paradigm of 'Responsible Research and Innovation' (RRI), regional stakeholder representatives are involved and participated in a variable geometry. In particular, the Interdirectional Working Group, which involves representatives of the Regional Departments and the Regional System, takes part in the process internally within the Region, as technical support to the Interdepartmental Steering Committee, and externally the members of the Development Pact, the Regional Forum for Research and Innovation and the Lombardy Technology Clusters, which bring together business associations, trade associations, research bodies, enterprises and social partners.

Together with the Lombardy Technological Clusters, a solid **co-design process** of development priorities for each RIS3 Innovation Ecosystem has been set up, grouped by macro-topics reflecting a clear alignment with European policies and with a clear objective of obtaining synergy between regional, national and European funds starting from strategies such as the Horizon Europe Framework Programme, the National Recovery and Resilience Plan, the National Research Programme, the Regione Lombardia's Sustainable Development Strategy. With the support of the Clusters and other territorial stakeholders, the **peculiarities of the Lombardy production and innovation system, the needs of the Lombardy companies** and the **transversality** of the development trajectories on which to focus the initiatives and measures of Regione Lombardia and its system, concentrate investments, support the increase of the company's propensity towards innovation, through the integration of innovative technologies to meet the challenges posed by digitalisation and the transition towards a sustainable production and consumption model, have been translated into the identified technological priorities.

The co-design process, initiated in the 2014-2020 European programming period and consolidated in the current programming period (2021-2027), is constantly evolving, enriched with new technologies and stakeholder involvement methods to detect emerging opportunities in the area at an early stage so that strategic development lines can be aligned and "adapted" according to real changes in the territory.

¹ Update of the Regione Lombardia's S3 Intelligent Specialisation Strategy 2021-2027 and Approval of the 2022-2023 Research and Innovation Work Programmes with Resolution XI/5688 of 15/12/2021

The role of Confindustria Lombardia in supporting innovation in the regional production system

Confindustria Lombardia is the regional representation of Confindustria that brings together the **9 Lombardy territorial associations and ANCE Lombardia**. With more than **13,000 companies** and **around 700,000 employees**, it represents almost a quarter of the entire Confindustria system.

It acts as a hub of the Lombardy Confindustria association system, through the promotion and integration of existing excellences and competences and, in particular, by exercising the **exclusive representation of Lombardy enterprises towards the Region**, overseeing the European policies for development and lobbying on the definition and implementation of the ERDF and ESF+ European Programmes. The aim is to strengthen the Lombardy production and innovation system, with a focus on the competitive advantage of the manufacturing sector, which is a driving force for the entire economy and an indispensable asset for creating development, transition, mobility and employment, by building operational relations and conveying concrete and useful proposals for the policies and investments of Regione Lombardia. The aim is therefore to build and develop strong and constant institutional relations with regional interlocutors, working closely with the federated associations to produce proposals to be presented to the Region for the competitiveness of the Lombardy businesses. At the same time, Confindustria disseminates information and documents on the legislative and administrative activities of the Region, thereby promoting shared interpretation within the system.

Confindustria Lombardia also lobbies all the other stakeholders and liaises with Confindustria, contributing to the activity and definition of national level positions, focusing on the issues of greatest importance for the Lombardy region.

This activity involves constant joint work with the Confindustria in the region, implemented at a political level in the meetings of the statutory bodies, such as the **Presidential Council** and the **Committee of Directors**, and at a technical level in the work of the **Commissions and Technical Committees**, made up of officials from Confindustria Lombardia and the territorial associations according to their areas of expertise and specialisation: Environment, Clusters, Cohesion and Development, Communication, Energy, Europe, Internationalisation, Education and Training, Labour, Industrial Policy and Innovation, Security, Territory and Infrastructure.

Confindustria Lombardia also manages, upon instruction by its member associations, special shared projects.



These include the **Digital Innovation Hub (DIH) Lombardia**, set up by Confindustria Lombardia and the Territorial Associations with the aim of being the “gateway” for companies to digital innovation and with the task of stimulating and promoting the production system’s demand for innovation, supporting companies in the challenges brought about by the transformation in key 4.0. DIH Lombardia creates value for companies by carrying out activities and promoting initiatives aimed at bringing companies closer to 4.0 technologies and assessing their application in the production process. In this process, companies are accompanied by the DIH in the assessment of their own digital maturity and towards those offering solutions and innovation.



Confindustria Lombardia is also a partner of the Enterprise Europe Network through the SIMPLER consortium. **Enterprise Europe Network (EEN)** is Europe’s largest SME supports network, operating in over 60 EU and non-EU countries. The network offers information and support services for accessing European opportunities, for internationalisation, in partner search and supply and in the management of innovation processes.



Confindustria Lombardia is also among the founding members, together with IMS International and Politecnico di Milano, of the **World Manufacturing Foundation (WMF)**, established with the support of Regione Lombardia in 2018, as a platform to promote industrial culture, expanding knowledge, promoting innovation and fostering cooperation in the manufacturing sector. The Foundation’s defining business model is that of the *Triple Helix*: its competitiveness is enhanced by cross-sector collaboration involving industry, academia and institutions. The Foundation also organises the World Manufacturing Forum, an annual event dedicated to manufacturing to discuss the most urgent challenges facing the sector.



CONFINDUSTRIA
Lombardia

POR FESR 2014-2020 / INNOVAZIONE E COMPETITIVITÀ



UNIONE EUROPEA
Fondo europeo di sviluppo regionale



**Regione
Lombardia**



POR FESR 2014-2020 / INNOVAZIONE E COMPETITIVITÀ

Regione Lombardia
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