



S3Chem
Interreg Europe



European Union
European Regional
Development Fund

CATALONIA ACTION PLAN



ACCIÓ



Generalitat de Catalunya
Government of Catalonia

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Action Plan for the promotion of Smart Specialisation Strategies in the chemistry and bioeconomy sector in Catalonia

General Information:

Partner Organisation: ACCIÓ Catalan Agency for Business Competitiveness

Country: Spain

NUTS2 region: Catalonia

Contact Person: Ma. Dolors Nuñez

Email: dnunez@gencat.cat

Phone Number: +34 93 567 48 82

 [Facebook.com/S3Chem](https://www.facebook.com/S3Chem)

 [linkedin.com/S3Chem](https://www.linkedin.com/S3Chem)

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1. Introduction

The chemical industry is one of the sectors that contribute more to the economy, both for its direct contribution and for its ability to impact other value chains

Chemistry is part of the value chain of almost all industrial systems. It supplies raw material for various products, allows the development of advanced materials, and contributes essentially to the improvement of food, hygiene, and health. In addition, thanks to the valorisation, the chemistry favours the reuse and the obtaining of products of added value.

The chemical industry has a rooted tradition in Catalonia that dates back to the beginnings of the industrial revolution and is currently one of the main assets.

Catalonia manufactures 3.4% of the European Union's chemical products. It has about 800 companies working directly in basic chemistry and employs more than 31,000 people. But if we also consider sectors attached to chemistry as pharmacy and plastics, the number of companies reaches 2,050 and more than 69,000 employees.

Chemistry is a key sector for the Catalan industry and is responsible for 12.78% of the gross domestic product.

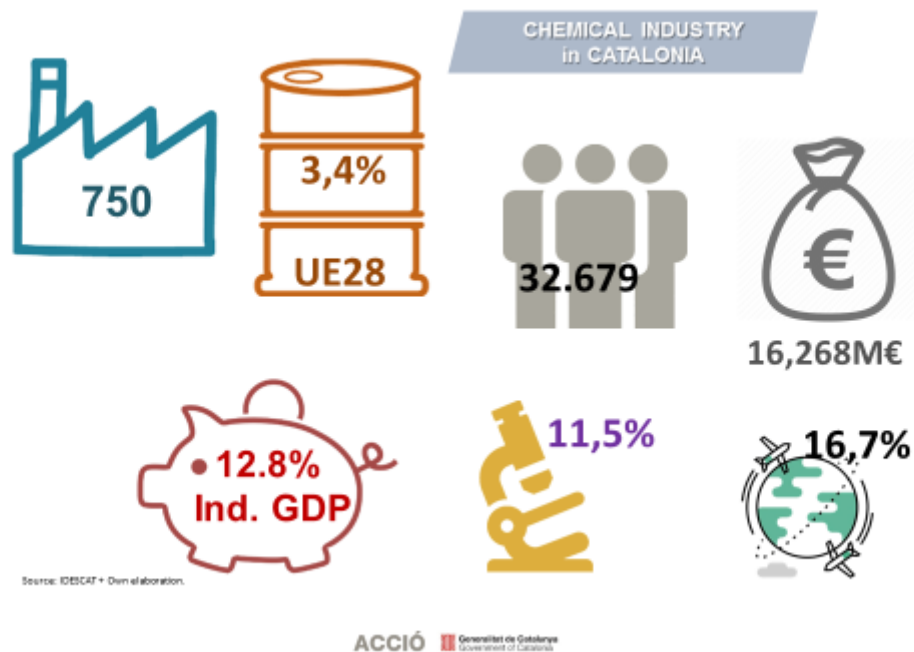


Fig.1.- Chemical Industry in Catalonia

The chemical sector faces a series of challenges that can be grouped into 4 large blocks:

International Competitiveness.

Reduce production costs to make them more competitive, the main one in terms of the cost of energy, necessary for a large part of the processes. Introduction of renewable energies in the production processes.

Select the right business models and design and produce differentiated products with high added value.

Participate in international projects to find innovative solutions to global challenges.

Circular Economy and Bioeconomy

The chemical industry must play a fundamental role, and it can provide solutions, in the new models of Circular Economy and Bioeconomy, with a better efficiency in the use of resources, new raw materials, reuse of resources, water treatment, waste, transformation and use by-products into new secondary raw materials.

Processes

Safer, more effective and selective processes. Introduction of new technologies such as catalysis, synthesis and flow processes, and those related to Industry 4.0

Talent

Attraction of young people to this science and maintain the knowledge.

From 2016 onwards the chemical regions Saxony-Anhalt, Limburg, Catalonia, Asturias, Lombardy, Wallonia and Masovia have cooperated in the Interreg Europe Project S3Chem to strengthen Smart Specialisation Strategies in the chemical and bioeconomy sector. All regions have given special priority to this sector in their Regional Innovation Strategies (RIS) due to the economic importance of the chemical industry.

The RIS provides the basis for the regional innovation funding in the framework of the ERDF. In this context, the S3Chem project has looked at different dimensions for the improvement of these policy instruments: better involvement of regional stakeholders and governance, project generation, funding instruments and evaluation and monitoring. Based on good practices identified in several regions an interregional learning process has been initiated. After three years of intensive exchange of experience, the partners have developed an Action Plan, which describes further concrete actions to improve their policy instruments for the promotion of innovation in the chemical and bioeconomy sector. The Action Plan will ensure the impact and sustainability of project results for the implementation of measures in the ongoing structural funds period 2014-2020.

Catalonia has focused its Action Plan to the improvement the Regional Innovation Strategy with special emphasis on the R&D programmes and the chemical industry.

The initiatives proposed are aimed at helping to improve the competitiveness and internationalization of Catalan companies by reinforcing the available instruments such as grants for collaborative and international research projects, for which, in addition, a pilot plan has been requested to create the conditions and the confidence necessary to generate interregional projects. Another initiative proposes Managing Risks and Opportunities through the improvement of the RIS3-MCAT Platform by introducing references to the chemical industry and stakeholders focusing on lessons learned from the Lombardy Open Innovation Platform and also to address Stakeholder questions and concerns. In this aspect, participation in the Thematic Area Chemicals from the S3 Platform Industrial Modernisation (Action 3) is key to being able to meet the objectives.

The implementation of this Action Plan will be jointly coordinated with the Regional Ministry of the Vice-presidency and of the Economy and Finance, which is responsible for the management of ERDF.

Clusters, associations, research centres and universities have actively participated throughout the project and have supported this initiative.

2. Description of the Regional Action Plan

The Action Plan Aims to impact the Investment for Growth and Jobs programme and the name of Policy Instrument addressed is the Research and Innovation Strategy for the Smart Specialisation of Catalonia (RIS3CAT)

Policy Context

Catalonia has adopted the priorities of Europe 2020 in the Catalonia 2020 Strategy (ECAT 2020) which is the roadmap of the Government of Catalonia to relaunch the economy and reorient the productive sectors through a more intelligent, sustainable economic model and inclusive.

The ECAT 2020 establishes objectives and provides a stable framework to guide public policies for competitiveness towards the year 2020. The strategy focuses mainly on measures that have a direct and measurable impact on priority areas such as employment, training, social cohesion, innovation and knowledge, entrepreneurship, internationalization and green economy.

In addition, the RIS3CAT is the result of the analysis of the different production sectors and identified 7 strategic sectors to lead the transformation of the Catalan economy towards the objectives of the Europe 2020 Strategy.

RIS3CAT General Scheme

Pillar 1	Pillar 2	Pillar 3	Pillar 4
Leading sectors <ul style="list-style-type: none"> Food and drink Chemicals, energy and resources Industrial systems Design-based industries Industries related to sustainable mobility Health industries Cultural and experience-based industries 	Emerging activities These will be identified in the smart specialisation process	Cross-cutting enabling technologies <ul style="list-style-type: none"> ICTs Nanotechnology Advanced materials Photonics Biotechnology Advanced manufacturing 	Environment for innovation Public policies <ul style="list-style-type: none"> Digital agenda Entrepreneurism Eco-innovation (green economy) Non-technological innovation Training and talent
RIS3CAT Action Plan measures <ul style="list-style-type: none"> RIS3CAT communities Specialisation and Territorial Competitiveness Projects (PECT) Emerging activities R&D cooperation projects Public-private partnerships in R&D&I Knowledge industry Technology transfer Innovative public procurement Strengthening the technological capabilities of research and innovation infrastructure International cooperation Industrial PhDs Development of RIS3CAT in Barcelona 			

Fig.2.- RIS3CAT General Scheme

The S3Chem project is aimed at analysing the Research and Innovation Strategy for the Smart Specialisation of Catalonia (RIS3CAT) and the ERDF Operational Program of Catalonia 2014-2020: (Thematic Objective 1). Promotion of research, technological development and innovation (with focus on chemical sector for Green Economy).

To deploy the RIS3CAT, the Government launched the Industrial Policy 2014-2020, aiming at strengthening the industrial sector under a sectorial approach, in particular, a specific Programme for the Chemical, Energy and Resources Industries (PIQER) was created targeting 400 companies with a turnover of 15.580M€. In the course of its implementation, the original programme was replaced by the **National Agreement for Industry 2017-2020**, with the support of actors' quadruple helix. It earmarked 6 axes for priority action, among them international competitiveness and sustainability and circular economy.

Participation in the S3Chem project has allowed Catalonia to explore different approaches to RIS3 strategies from partner regions. Its analysis allowed us to rethink some instruments, and to share and learn from good practices.

The RAP should also be understood as a roadmap that facilitates structural changes and helps to strengthen and make our chemical industry more sustainable, inspired by cooperation and mutual learning.

The action plan tries to impact on growth, and cooperation policies and is the result of mutual learning and reflections carried out within the framework of the S3Chem project (meetings and analysis of policies between project partners and meetings and working groups with local stakeholders).

It pays attention to different instruments already available, as "Nuclis", and it works as a tool to establish interregional cooperation with a positive impact on innovation, as well as other emerging technological hubs, which in turn also can serve as catalysts of new opportunities, and boosts the European projection of Catalonia with the participation at the Chemicals Thematic Area of the S3Partnership – Industrial Modernisation (<http://s3platform.jrc.ec.europa.eu/chemicals>).

2.1 Action 1: Managing and improving R&D programmes

2.1.1 Relevance to the project

The collaborative R&D programmes in Catalonia funded by ERDF have more than 10 years of experience with good results both in terms of companies and centres participation and in the quality of the projects funded.

Initially, the projects were limited to Catalan companies and technological centres, but subsequently some collaboration agreements were established with other countries and regions with the aim of helping to increase the global and international competitiveness of companies.

The collaborative R&D programmes are made up of companies that collaborate with agents of the R & D system in technological innovation projects. These are research and development projects, of high technological risk and with a strong ability to generate externalities in Catalonia, which could hardly be carried out exclusively privately due to the high associated technological risk.

The projects evaluate the generation of employment and industrial investments, as well as the maintenance of the scientific and productive activity of Catalonia and the participation of scientific and technological agents in the R & D activities that they include.

The collaborative R&D programmes are coordinated and managed by ACCIÓ.

Technology cores should contribute to the following:

- Increase private investment in R & D.
- Improve the technological capacity of companies in Catalonia, especially with regard to transversal facilitating technologies.
- Improve the positioning of companies in the leading sectoral areas in the international market.
- Align the strategic actions of R & D & I agents and companies.

The collaborative R&D programmes have two types: the local “Nuclis”, made up of Catalan companies with partners in Catalonia, and the international “Nuclis”, made up of Catalan companies that collaborate with international partners with the aim of building synergies and strategic complementarities with other countries and regions in the priority areas of the RIS3CAT.

Figure 3 shows the results obtained in the two open calls in this period. Chemistry, energy and resources registers 20.47% of the investment (7,37 MEUR);

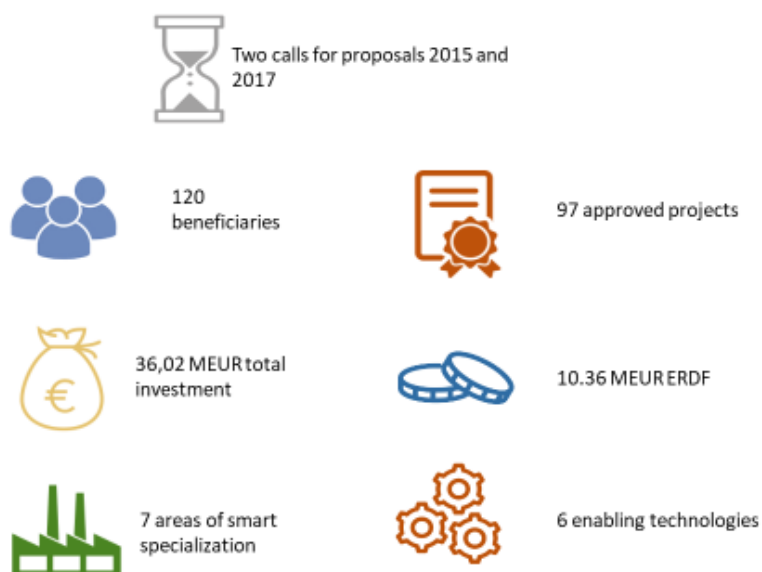


Fig.3.- Results for Instrument of collaborative R & D projects

In the course of the learning process of the S3Chem project Catalonia has been particularly interested in knowing the capabilities, knowledge and areas of interest of the regions that make up the consortium and have found multiple common themes in chemistry and circular and bio economy and possibilities to find synergies for common developments in practically all the regions that participate.

During Phase 1, other regions such as Limburg and Saxony-Anhalt explained their calls for proposals approach to fund collaborative R&D programmes funded by ERDF. One of the main approaches that differs from Catalonia/ACCIO is the thematic focus for calls for proposals and that they do not have a deadline. They open the call and it is open until the funds are finished. This second point is not going to be explored due to restricted rules concerning calls in Catalonia/Spain where it is compulsory to have deadlines.

The lesson learned thematic *focus for call for proposals* that ACCIO will try to implement is the approach that **Limburg** has developed in calls such as “**Calls for Proposals/Open Innovation**”.

In addition, the agreement signed between the regions of Limburg and Saxony-Anhalt to develop a 3D Printing Hub, has also inspired us to explore other possibilities, other instruments and new ways of collaboration.

2.1.2 Nature of Action

To finance collaborative research projects with high technological risk and that respond to market needs ACCIO will develop the following:

Integrate lessons learned “thematic calls for proposals” in calls for Catalan Specific Programmes from RIS3CAT and executed by ACCIO (Nuclis for example)

Build synergies and strategic complementarities with other countries and regions in the priority areas of the RIS3CAT

Boost the participation of Chemical companies in programme calls from the policy instrument addressed.

Furthermore, this will also contribute to detect other possibilities of cooperation with other interregional instruments or other collaborations, creating balanced frameworks of cooperation among regions and among companies.

The following aspects and indicators will be measured:

Nº companies involved

Nº Technological / Research centres involved

Nº Projects presented with special emphasis in chemistry and circular and bio economy.

Nº Projects Funded with special emphasis in chemistry and circular and bio economy

The data will be collected on an annual basis once the cycle of grant call - presentation of projects - evaluation has been completed. At the end of the implementation, a compendium of success stories will be made and communicated to the members of the S3Chem project.

2.1.3 Players involved

Organisation	Role
ACCIÓ	ACCIÓ is responsible of the R&D instruments like “Nuclis” In the course of the implementation of future innovation funding, it is also responsible for the selection of projects.
Ministry of the Vice-presidency and of the Economy and Finance	This Ministry is the Managing Authority for the ERDF Operational programme.
Development agencies from S3Chem regions	ACCIÓ will work with other regions in order to reach agreements that allow the development of R&D programmes and projects

Catalan Stakeholders	Dissemination and participation in the projects
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2.1.4 Timeframe

Ongoing efforts during 2 years of monitoring phase, update once a year

2.1.5 Costs

The estimated cost is 1 full time person/year.

The next International NUCLIS call, is expected to be launched at mid-June 2019 and the deadline will be the 10th October 2019. The budget for the International NUCLIS Call in 2019 is expected to be around 800K€.

2.1.6 Funding Sources

ERDF and Catalan funds.

2.2 Action 2: Engaging Externally

2.2.1 Relevance to the project

This action aims to explore intra and interregional synergies to develop new ideas, and projects by advocating to specifically include the chemical sector in the next RIS3CAT Action Plan and by empowering the Chemical Catalan sector through its participation in the Thematic Area Chemicals from the S3 Platform Industrial Modernisation.

The chemical sector is the second most important sector in Catalonia and is also part of the value chain of many other industrial systems. Chemistry is found in fields such as energy, water, food, health, materials, and many current and emerging technologies can and should have application, exploring cross-sectoral applications and development.

This action aims to advocate and to boost the Catalan Chemical companies and Catalan RDI focused on chemistry by promoting it in the next RIS3CAT Action Plan and at European level. Specifically Chemical sector focused on new technologies, emerging technologies and digital transformation and disruption, as well as singular projects to help the industry transformation to a more efficient, sustainable and innovative one.

2.2.2 Nature of Action

Improvement of the RIS3CAT by introducing the Chemical sector in a specific way and not in a generic way in the Pillar 1 Leading sector “Energy and resources” through the advocacy of the Chemical Catalan stakeholders

During the S3Chem Project, a group of stakeholders was created in Catalonia with representatives of clusters, associations, companies, universities, technology and research centers that have actively participated in the discussions and in the project. A series of seminars was designed, where topics of interest to the chemical community were discussed and whose objective was to put the new technologies in contact with the needs of the industrial sector. As a result of these seminars, concrete projects have emerged between research centers and companies. This action will necessary focus on the need to specifically include the chemical sector in the next RIS3CAT Action Plan other advocacy actions will be also done through the Thematic Area Chemicals from the S3 Platform Industrial Modernisation.

Advocacy and political incidence through the Thematic Area Chemicals from the S3 Platform Industrial Modernisation

As a result of the work and the possibilities of interregional cooperation that were detected in the course of the project Interreg S3Chem, and thanks to the collaboration of ECRN, Limburg regions of Lombardy and led the creation of a thematic chemistry technology platform.

Catalonia has joined this platform with the aim to help modernize the chemical sector and help create policies and tools that help make the most competitive, sustainable and efficient chemical industry and can successfully overcome the challenges it faces. Catalonia will propose leading the Working group on sustainable process technologies. This theme links with the objectives of the RIS3CAT strategy and the National Plan for Industry, which replaces the previous Impulse Plans, and one of the axes of this Plan is the Circular Economy.

In this action, the value chains of the chemical industry will be mapped in certain areas selected for their impact. The social and technological challenges to which the sector, industry and research must face will be defined. The needs of companies at regional and interregional levels and the available instruments will be analyzed.

There will also be active participation in other working groups, work with the Catalan ecosystem to detect new opportunities and study the possibility of improving some of the sectoral instruments or policies.

The following aspects and indicators will be measured:

- Action Plan of the RIS3CAT 2021-2026
- Initiatives developed through S3 Platform

2.2.3 Players involved

Organisation	Role
ACCIÓ	ACCIÓ is the responsible for the design of actions and project implementation.
Ministry of the Vice-presidency and of the Economy and Finance	The Ministry is the Managing Authority for the ERDF Operational programme.
Catalan Stakeholders Chemical companies, /Universities / Research and Technological Centres	Point of reference for the determination of technologies and themes.

2.2.4 Timeframe

Ongoing efforts during 2 years of monitoring phase, update once a year.

2.2.5 Costs

The estimated cost is 2 full person-year.

2.2.6 Funding Sources

Funds from EDRF and own funds.

*The endorsement from the MA (Managing Authority) to the RAP will be stated through the letter of endorsement. The letter will be sent out as soon as we receive it signed.

Likewise, since the beginning of the project and during all these years of execution, we had several meetings with our Managing Authority (MA) informing about the evolution of the project.

Our MA have act as stakeholders during the S3Chem project.

Also important to highlight that our MA published in April'2018 a document related to the monitoring of our RIS3CAT focused on how to foster the complementarity between the Interreg Europe projects in Catalonia and our RIS3CAT:

http://catalunya2020.gencat.cat/web/.content/00_catalunya2020/Documents/angles/fitxers/intereg-ris3cat-en.pdf

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Appendix

Regional Action Plan letter of support

Project Information

Project acronym	S3Chem
Project title	Smart Chemistry Specialisation Strategy
Name of project partner	Catalan Agency for Business Competitiveness (ACCIÓ)

We hereby state:

- that we were informed about the preparation of the Regional Action Plan as part of the above-mentioned project,
- that the topic tackled by this Regional Action Plan is in line with the Catalonia ERDF Operational Programme and the RIS3CAT,
- that we acknowledge the participation of the above-mentioned partner(s) in the Regional Action Plan,
- that we will engage with the stakeholder group and welcome opportunities for exchanging experiences with other institutions in Europe,
- that we will consider possibilities for implementation of the action plan through our policy instrument.

Name of signatory	Teresa MEDINA PLANS
Position of signatory	Deputy General Director of Economic Programming

Date 27th June 2019

Signature and institution stamp



Generalitat de Catalunya
Departament d'Economia i Finances
Direcció General de Promoció Econòmica

Thanks to all project partners



SACHSEN-ANHALT

Ministerium für Wirtschaft,
Wissenschaft und Digitalisierung

isw

Institut für Strukturpolitik und Wirtschaftsförderung
gemeinnützige Gesellschaft mbH

Mazovia.
heart of Poland

provincie limburg



**Regione
Lombardia**



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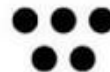
IDEPA

Instituto de Desarrollo Económico
del Principado de Asturias

ACCIÓ



Generalitat de Catalunya
Government of Catalonia



Wallonia.be

Contact

Ministry of Economy, Science and Digitalisation Saxony-Anhalt

Hasselbachstraße 4

39104 Magdeburg

Germany

Phone: +49 391 567 4263

Email: andre.mangelsdorf@mw.sachsen-anhalt.de

Web: www.mw.sachsen-anhalt.de



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