



"CirceE - European regions toward Circular Economy"

INTERREG Europe Project



Policy Instrument Analysis and policy options

Project Partner 3

Lower Silesia Region

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1. Executive summary

The analysis focuses on the document "Regional Innovation Strategy for the Lower Silesian Voivodship for the years 2011-2020" with the annex "Strategic Framework for Smart Specializations of Lower Silesia". This document was indicated by the project partner - Lower Silesia Voivodship as a selected policy instrument subject to analysis, from the point of view of the opportunities of implementing circular economy principles into selected areas of smart specializations and activities planned and implemented under the Strategy.

2. Policy instrument analysis

Details on the PI

Regional Innovation Strategy for Lower Silesia Province for the years 2011-2020 constitutes currently applicable strategic document defining challenges the region faces in terms of knowledge-based economy and innovation growth in Lower Silesia. This strategy was adopted by the Provincial Board in 2011. Although the title of the document does not refer to the Smart Specialisation Strategy (the RIS3 concept was formulated after the Regional Innovation Strategy for Lower Silesia Province has been adopted), it contains elements recommended by the European Commission as regards this concept. *Strategic Framework for Smart Specialisations of Lower Silesia* indicates areas of smart specialisations of Lower Silesia and fulfill the criteria of ex ante conditionality in the context of funds for research and innovation under the Regional Operational Programme 2014-2020. This document indicates the areas of intelligent specializations of Lower Silesia together with the mechanisms of verification of these areas, among others through the entrepreneurial discovery process, which is a constant dialogue between the regional authority, the sphere of science and business.

Smart specializations are an instrument of the European Commission that determines the launch of regional operational programs. It obliges regions to designate key areas of the economy in which they want to develop particularly. It is about sectors with high innovative and competitive



potential as well as scientific and technological specializations with high implementation and patent activity. According to the principle that one cannot be good at everything, the regions choose their strengths with the greatest development prospects and they focus public support on them. "Strategic framework for smart specializations of Lower Silesia" identifies regional specialties based on objective data and evidence. The studies present a broad statistical analysis as well as an analysis based on the economic phenomena observed in the region, including those fueled by the existing public support for innovations. Such analyzes allowed the selection of a limited number of priorities focused around the specialization. The method of identifying smart specializations presented in the "Strategic Framework ..." is based on cross-analysis of both industrial and scientific-technological specializations. Initial analysis was made for the entire regional context and potential, from which were distinguished those pointing to competitive advantages and the potential to achieve excellence based on cooperation between the R&D sector and the business sector. A wide range of stakeholders was involved - entrepreneurs, R&D sector, business environment institutions and administration. As part of the process, the most important strengths and weaknesses of the areas were assessed and key opportunities and challenges were identified.

On the of Lower Silesia smart specializations list were included: Chemical And Pharmaceutical Industry, Spatial Mobility, High Quality Food, Natural Resources And Recyclable Materials, Machines And Equipment Manufacturing, Materials Processing Technology, Information And Communication Technologies (ICT). The indicated areas do not refer directly to the principles of the circular economy, however, some sub-areas fit in the concept. They involve mainly "Natural Resources And Recyclable Materials" in sub-area "Technologies for useful materials recovery, recycling and waste treatment"; Spatial Mobility in sub-area "Power source and power supply", "Electromobility" and "Systems for increasing transport efficiency (also in ecological terms)", but also in other identified areas. Importantly, the indication of areas of smart specialization means the possibility of their financing from the Regional Operational Program for the Lower Silesian Voivodship 2014-2020.



Lower Silesian Smart Specializations are supported under the 1st Thematic Objective TO 1. ROP for Lower Silesia 2014-2020 strengthening research, technological development and innovation". This goal is to be achieved through specific objectives:

1. Increasing the marketization of research and development activities
2. Increased research and development activity of enterprises
3. Better conditions for SME development
4. Increased level of foreign trade in the SME sector
5. Increased application of innovations in enterprises in the SME sector

How change, steer the PI: kind of Policy options feasible in the PI

Circular Economy issues are not directly included in „Regional Innovation Strategy for Lower Silesia Province for the years 2011-2020” nor in “Strategic Framework for Smart Specialisations of Lower Silesia”. Therefore, the project partner – Lower Silesia Voivodship, based on the experience resulting from the Circe project, plans to update these documents and take into account the conclusions resulting from the activities conducted so far. What is worth emphasizing here is that this has already happened in case of the Development Strategy for the Lower Silesian Voivodship 2030*, which was updated and adopted by the Lower Silesia Regional Assembly on 20th September 2018. Based on experience from Circe project "**Development of Circular Economy**" goal was implemented by four specific objectives:

1. Support activities to reduce the use of raw materials and waste generation in production processes
2. Support projects that work on secondary raw materials market and remanufacturing
3. Development of business models supporting maintenance and repair systems for products
4. Social education for Circular Economy (social campaigns, awareness campaigns)

* see section 4. Other policy instruments analysis



Lower Silesia is one of the fastest growing regions in Poland. Gross Domestic Product, the share in national GDP and annual income growth rate prove the region has high development potential. Diversified industry and services prevail in the sectoral structure of Lower Silesia economy. The distance between the region and the average of development in the European Union is gradually decreasing. Diversified industry and services prevail in the sectoral structure of Lower Silesia economy. Due to the region favourable geographical location and communication links with Western Europe and well educated and experienced employees, Lower Silesia is an attractive place for investments and has high internationalisation potential. However, in order to maintain the strong position of the economy of the Lower Silesian Voivodship in Poland in the next ten years and at the same time to improve the competitiveness of the region's economy in relation to other economies of the European Union regions, the processes of innovative development of the region should be based on two strong pillars. On the one hand, the high investment attractiveness of the region, in particular in the field of advanced technologies, and the activity of regional clusters should be exploited to encourage domestic and foreign enterprises from the medium-high and high technology industries to locate in the region. This will have a positive impact on the ratio of medium-high and high technology companies in the economic structure and thus on strengthening knowledge-based business activities. The development of new industries in the economy will help mitigate the negative effects associated with the possible transfer by international corporations and Polish enterprises from the traditional industries of their plants to other countries due to better location indicators in countries outside the European Union. On the other hand, take advantage of the maturity of medium size enterprises, their innovative activity and openness to cooperation with business partners to create and implement innovative business projects. In this respect, the active role of the technology broker should be played by business environment institutions providing pro-innovative services within various economic cooperation networks.

3. Policy options identified

Policy options for the opportunities



Activity of Lower Silesia enterprises and scientific units in regional clusters associated with “green development” idea should be the basis for using the opportunity to introduce new innovative solutions in the area of food, health, energy and the environment on an international scale. At the same time, the strengthening position of chemical industry, pharmaceutical industry and automotive industry in the regional economic structure creates opportunities for the region to join the global processes of development of ecological technologies. Therefore, the most important challenges of Lower Silesia related to the development of innovation and building a long-term competitive advantage of the regional economy have been identified:

1. Increasing investment in R&D by private sector
2. Exploiting research potential of R&D centres and universities by the business sector
3. Extending an offer of R&D centres and universities for business to include licenses and know-how
4. Supporting the process of bringing new products or services to market and their expansion and promotion on domestic and foreign markets
5. Increase in the percentage of innovative companies, both in the industry and service sector
6. Increasing the level of cooperation between enterprises and between business and science within a network of connected businesses, suppliers, and associates (cluster initiatives)
7. Promoting creative and innovative attitudes through educational programmes for children and young people
8. Focusing public support on regional specialisations of the biggest development prospects in the area of innovation
9. Focusing public support on regional specialisations of the biggest development prospects in the area of innovation

These challenges are correlated with the objectives of the Lower Silesian Innovation Strategy for 2011-2020 and the ROP for Lower Silesia 2014-2020 (as a tool to implement these challenges). Defined as part of the Circe Opportunity project, they are also correlated with these goals and their implementation capabilities. This is illustrated in the following table:



Table 1 policy options for opportunities

Challenges of Lower Silesian Smart Specialisation	RSI 2011-2020 – strategic and operational objectives	LS ROP 2014-2020 – as a tool for meeting the challenges	Opportunities from prioritization	Policy options
<p>1. Increasing investment in R&D by private sector</p>	<p>Strategic Objective 2. Increasing the chance of success of innovative business projects Operational objectives: 2.2 Supporting research and development activities in enterprises</p>	<p>Measures: 1.2A Support for enterprise wishing to start or expand R&D activity 1.2B Creating and developing R&D infrastructure of enterprises</p>	<p>1 2 13 2 21 24</p>	<p>Collaboration platforms</p>
<p>2. Exploiting research potential of R&D centres and universities by the business sector</p>	<p>Strategic Objective 2. Increasing the chance of success of innovative business projects Operational objectives: 2.2 Supporting research and development activities in enterprises 3.2 Streamlining procedures for commercialisation of knowledge in research centres</p>	<p>Measures: 1.1. Strengthening the R&D and implementation potential of universities and research centres 1.2C Services for enterprises 1.5B Supporting investments in implementation of R&D findings in enterprises conducting business activity (e.g. commissioning mass production in enterprises) under Measure 1.2 (implementation of R&D findings in enterprises conducting business activity)</p>	<p>5 21 28</p>	<p>Collaboration platforms Business support schemes 7</p>



<p>3. Extending an offer of R&D centres and universities for business to include licenses and know-how</p>	<p>Strategic Objective 3 Increasing innovative potential of Lower Silesian research centres</p> <p>Operational objectives:</p> <p>3.2 Streamlining procedures for commercialisation of knowledge in research centres</p>	<p>Measures:</p> <p>1.1. Strengthening the R&D and implementation potential of universities and research centres</p> <p>1.2C Services for enterprises</p>	<p>1 6 21 24</p>	<p>Collaboration platforms</p> <p>Business support schemes</p> <p>Information & awareness</p>
<p>4. Supporting the process of bringing new products or services to market and their expansion and promotion on domestic and foreign markets</p>	<p>Strategic Objective 2. Increasing the chance of success of innovative business projects</p> <p>Operational objectives:</p> <p>2.2 Supporting research and development activities in enterprises</p>	<p>Measures:</p> <p>1.2A Support for enterprise wishing to start or expand R&D activity</p> <p>1.2B Creating and developing R&D infrastructure of enterprises</p> <p>1.4 Internationalisation of enterprises</p> <p>1.5A Supporting product and process innovation of SMEs</p> <p>1.5 B Supporting investments in implementation of R&D findings in enterprises conducting business activity (e.g. commissioning mass production in enterprises) under Measure 1.2 (implementation of R&D findings in enterprises conducting business activity)</p>	<p>2 7 10 12 19 23</p>	<p>Business support schemes</p> <p>Information & awareness</p> <p>Fiscal frameworks</p>
<p>5. Increase in the percentage of innovative companies, both in the industry and service sector</p>	<p>Strategic Objective 2. Increasing the chance of success of innovative business projects</p> <p>Operational objectives:</p> <p>2.1 Providing enterprises with effective forms of support (such as</p>	<p>Measures:</p> <p>1.5A Supporting product and process innovation of SMEs</p>	<p>2 7 1 11 12 17 24</p>	<p>Business support schemes</p> <p>Fiscal frameworks</p> <p>Information & awareness</p>



	capital, expertise and infrastructure within Lower Silesian innovation system) 2.2 Supporting research and development activities in enterprises		26	
6. Increasing the level of cooperation between enterprises and between business and science within a network of connected businesses, suppliers, and associates (cluster initiatives)	Strategic Objective 4. Development of cooperation in the economy in the area of innovation Operational objectives: 4.1 Creating conditions for the development of cooperation in the area of innovation 4.2 Increasing the number of companies cooperating with other entities in the area of innovation in clusters	Measures: 1.2A Support for enterprise wishing to start or expand R&D activity 1.2C Services for enterprises 1.4 Internationalisation of enterprises 1.5A Supporting product and process innovation of SMEs	15 14 9 12 16 22	Collaboration platforms Business support schemes
7. Promoting creative and innovative attitudes through educational programmes for children and young people	Strategic Objective 1. Strengthening innovative skills and attitudes which are essential for knowledge-based economy Operational objectives: 1.1 Development of entrepreneurial and innovative	Measures: 10.2 Developing competencies of key importance for labour market, supporting the learning foreign languages, mathematics and natural sciences and ICT, and encouraging creativity, innovation and teamwork. 10.2G Providing workshops, counselling and	22 26 29	Information & awareness



	attitudes 1.2 Extending the provision of higher education services to include innovation needs of employers by inviting business representatives to the process of developing teaching programmes	other forms of raising qualifications to teachers and educational staff in the area of: students' key competences needed for labour market success (knowledge of ICT, mathematics and natural sciences, foreign languages), experimental teaching, attitudes to creativity, innovation and teamwork and methods for individualized approach to students		
8. Focusing public support on regional specialisations of the biggest development prospects in the area of innovation	Strategic Objective 2. Increasing the chance of success of innovative business projects Operational objectives: 2.1 Providing enterprises with effective forms of support (such as capital, expertise and infrastructure within Lower Silesian innovation system) 2.2 Supporting research and development activities in enterprises Strategic Objective 3. Increasing innovative potential of Lower Silesian research centres Operational objectives: 3.1 Earning a leadership position in regional scientific and technological specialisations 3.2 Streamlining procedures for commercialisation of knowledge	Measures: 1.1. Strengthening R&D and implementation potential of universities and research centres (only specialisations) 1.2 Innovative enterprises (all types of projects – only specialisations) 1.3B Supporting infrastructure intended for entrepreneurs (only specialisations) 1.3C Providing advisory services to SMEs (preferably specialisations) 1.4 Internationalisation of enterprises (preferably specialisations) 1.5A Supporting product and process innovation of SMEs (preferably specialisations)	7 1	Collaboration platforms business support schemes



<p>9. Making an offer for pro-innovation services provided by BEIs more professional</p>	<p>in research centres</p> <p>Strategic Objective 2. Increasing the chance of success of innovative business projects</p> <p>Operational objectives:</p> <p>2.1 Providing enterprises with effective forms of support (such as capital, expertise and infrastructure within Lower Silesian innovation system)</p> <p>Strategic Objective 4. Development of cooperation in the economy in the area of innovation</p> <p>Operational objectives:</p> <p>4.1 Creating conditions for the development of cooperation in the area of innovation</p> <p>4.3 Promoting cooperation between regional pro-innovative institutions in favour of enterprises</p>	<p>Measures:</p> <p>1.2C Services for enterprises</p> <p>1.2D Extending and making an offer for pro-innovative support for business environment more professional Extending R&D offer for BEIs</p>	<p>17 22</p>	<p>Information & awareness</p> <p>Collaboration platforms</p> <p>Business support schemes</p>
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Table 2 List of opportunities from Prioritisation Report:

Opportunity ID	Opportunity by sector
Raw Materials:	
10	use of secondary raw materials obtained from the processing of waste
2	development of a technology that minimizes the impact of mining on the environment
3	production of processing machines and equipment for the mining industry and the processing of raw materials
15	Innovation infrastructures for raw materials circular solutions
5	range of scientific research and teaching facilities of the region for raw materials
7	use of extraction waste
4	the use of hard-to-sell materials
1	Increase of efficiency of mining and processing of raw materials
14	Databank for using waste material
13	Actions and resources in the area of CE solutions for water and wastewater
6	growing demand for innovative products/services
11	Preparing business models to promote cross-sectoral links, by creating secondary raw materials markets or promoting so-called "Industrial symbiosis"
12	Develop new underground "intelligent mine" technologies by building partnerships between various industry players, including mining companies and mining-equipment manufacturers
9	expansion of the networks of centers of reuse
Biomass:	
21	strengthening of R+D activities
20	creating norms and standards for bio-products
17	creating local bio-refinery and biogas plants
19	stimulating demand for bio-products
18	increase of local biomass and biomass waste usage for power industry
16	identification of potential of local biomass
Food Waste:	
24	improvement of food production conditions throughout the production process from the producer to the consumer
22	Preventing avoidable food waste
23	Use of products from overproduction
25	proper forecasting of demand and correct marketing strategies
27	Use edible food surplus as a way of contributing to the alleviation of food poverty (e.g. social supermarkets)
26	promotion of Zero waste initiative
Other:	
29	raising awareness for circular economy potential in citizens
28	Introduce circular economy principles into lower and higher education



4. Other policy instruments analysis

Project partner 3 reviewed the remaining policy instruments and during the first phase of the project, based on CircE's exchange of experience, made a circular economy provisions in Development Strategy for the Lower Silesian Voivodship 2030*.

The Development Strategy is a document indicating the strategic areas of the region's development. In accordance with article 11 paragraph 2 of the Act on voivodeship self-government and article 3 point 2 of the Act of 6 December 2006 on the principles of development policy, local government of the Lower Silesia Voivodship is responsible for creating regional development policy, and the voivodship development strategy is the basic tool for shaping this policy as a concept of long-term and multi-aspect development, reflecting above all the preferences and expectations of the regional community, using the developmental opportunities to the optimum extent. The Voivodship Development Strategy is compulsory and is the most important document that concerns the indication of development directions in the voivodship.

5. The Stakeholders

Project stakeholders expressed their approval for the project activities within the scope of prioritization and analysis of policy instruments.

As part of the discussion on subsequent project activities resulting from analyzes, two types of activities were proposed:

- further work on updating the Regional Innovation Strategy 2030 and revision of the areas of smart specialization, including circular economy. This measure will allow financing these areas in the new EU 2021-2027 financial perspective. It also emphasize the importance of circular economy in regional policy in the field of innovation, research and development.
- activities in the field of education and promotion of circular economy model among entrepreneurs from Lower Silesia, scientists, but also children and youth. Knowledge about circular economy in Lower Silesia is still insufficient. In particular, educational activities aimed at students are necessary, including pupils from vocational schools. It was also said that it is worth using the



Marshal's Office experience in the implementation of the TRAILS educational project (follow – up project under the new name TRAILS + starts in spring 2019) and the experiences of Circe's partners who have already implemented similar educational projects about caring for the environment, including, among others: limitation of waste production, waste sorting and promotion of "circular" attitude in everyday life. The TRAILS + project will be implemented in Lower Silesia in the border area, for two years until the end of March 2021. As part of the project, a number of educational activities will be run by coaches from the Wrocław University of Science and Technology addressed to students of vocational and high schools. One of the activities may be carried out under the working name of "Be circular", where coaches would conduct classes on the circular economy in the form of workshops (like "Hackathon").