

# Industrial regions and climate change policies

## **SILESIA (Poland)**

Prepared for:

ETUC



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# Chapter 1: The Silesia Region

## Silesia: the engine of the Polish industry

Silesian Voivodship, or Silesia Province, is located in Southern Poland in the historic region known as Upper Silesia with the capital in Katowice. It was created on January 1, 1999, out of the former Katowice, Czestochowa and Bielsko-Biala Voivodships, following the Polish local government reforms adopted in 1998.

Silesian Voivodeship has the highest population density in the country (around 379 people per square kilometer, three times higher than the national average). At the end of December 2014 Silesia recorded 4.6 million inhabitants. The region is the most industrialized and the most urbanized in Poland: 78% of its population live in towns and cities. The region's important industrialization gives it one of the lowest unemployment rate of the country (8.6% at the end of July, 2015).

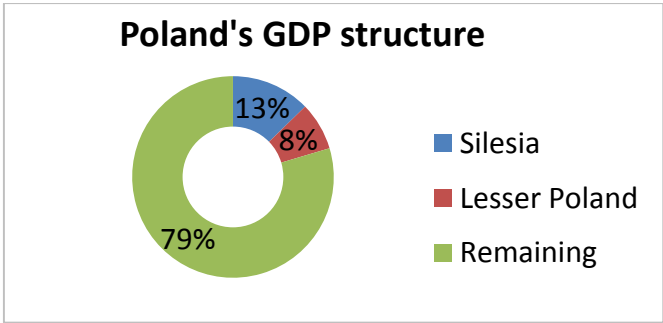
Silesia accounts for 12,7% of Poland's gross domestic product (207 billion zlotys in 2013, over 50 billion euros), ranking second behind Mazovia (voivodship Capital: Warsaw). In terms of production sold Silesia region ranks first (its sold production represented 17.1% of the national total in 2012). Industry employs nearly half a million people which makes it the highest rate in the country.

Silesia and Western Lesser Poland (voivodship Capital: Krakow) together represent a strategic region from an industrial point of view. 26 coal mines, 31 energy power stations (of over 6W), tenth of steel plants and metallurgical processing units are located in the region. The automotive sector is also a key local industry with Fiat and General Motors assembly plants and numerous auto suppliers (51 automotive companies are located in the Special Economic Zone of Katowice).

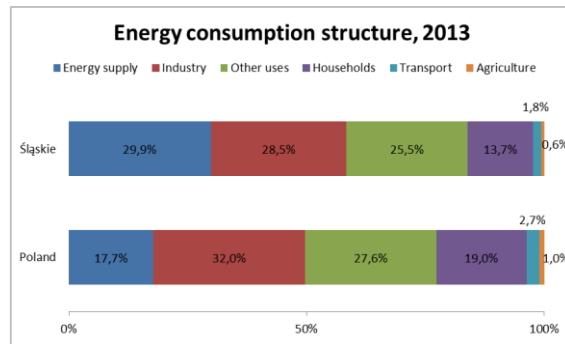
Headquarters of four key coal mining companies are also located in Silesia and Western Lesser Poland: Kompania Weglowa, Katowicki Holding Weglowy, Jastrzebska Spolka Weglowa and Tauron Wydobycie. Together these four companies employ nearly 90,000 people and produce 57 million tons of black coal i.e. more than 80% of the domestic production. These firms are the main suppliers for the Polish energy sector, from which half of the electricity production comes from black coal.

Numerous companies remain strongly linked to these four big producers, among which mining equipment manufacturers and metallurgical plants present in the region.

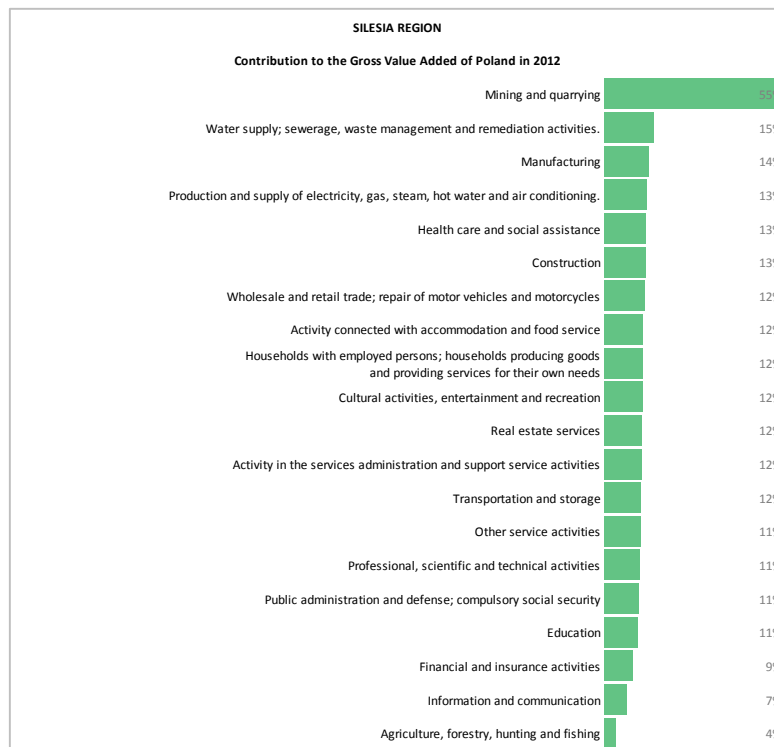
Silesia as perc. of total GDP



## Energy consumption by industry: Poland vs. Silesia



## Contribution of Silesia to Poland's Gross Value added by sector

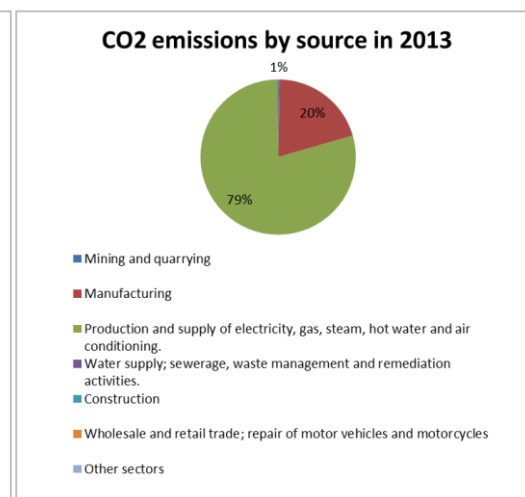
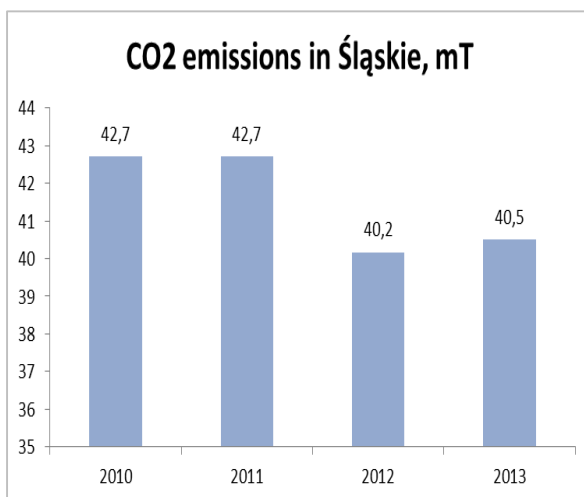
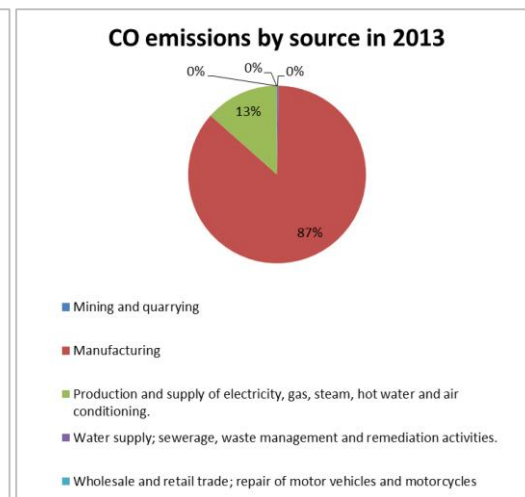
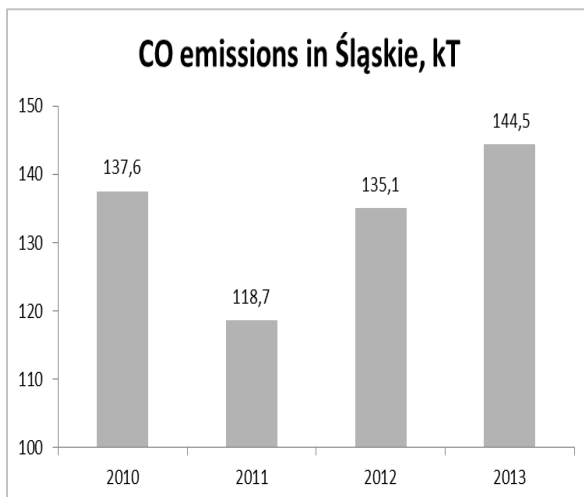
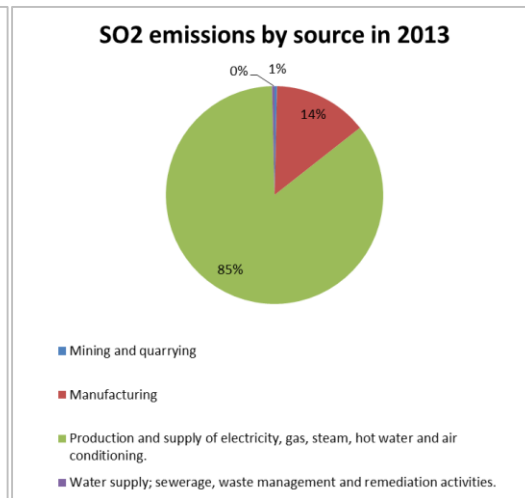
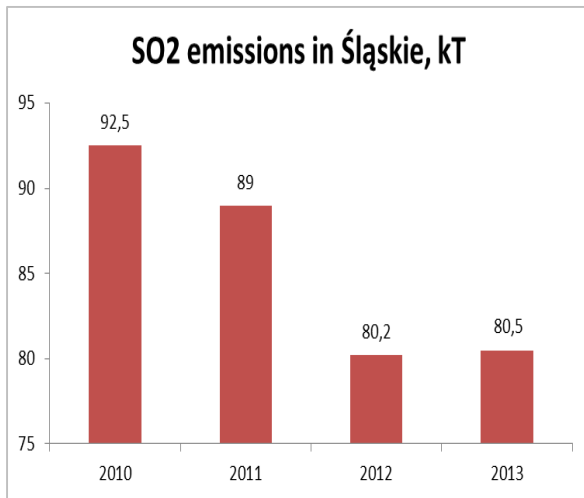


## Gaseous pollutants emission by Voivvodship

Gaseous pollutants emission from plants of significant nuisance to air quality by regions in 2013

Regions	Grand Total	Of which							CO	CO2
		SO2			Nox					
		Total	From combustion of fuel	From technological processes	Total	From combustion of fuel	From technological processes			
In thousand tonnes										
POLAND	237492,0	4269,0	401,4	26,5	343,9	164,6	3934,0	329,0	215591,3	
Łódzkie	42 960,8	72,3	71,9	0,4	51,4	48,4	3,0	21,5	42 814,1	
Śląskie	41 222,5	80,5	71,8	8,7	57,3	49,5	7,8	144,5	40 508,0	
Mazowieckie	28 654,9	78,1	74,8	3,3	40,8	39,8	1,0	18,7	28 508,4	
Wielkopolskie	17 169,4	31,6	30,8	0,8	25,0	23,1	1,9	7,1	17 089,7	
Dolnośląskie	15 286,4	38,0	32,9	5,1	16,3	15,0	1,3	7,1	15 222,8	
Opolskie	12 207,9	11,2	10,1	1,1	19,1	15,0	4,1	25,3	12 148,1	
Świętokrzyskie	11 523,6	10,6	8,0	2,6	17,0	12,0	5,0	41,2	11 453,6	
Małopolskie	11 001,2	29,9	29,1	0,8	20,4	14,5	5,9	12,2	10 892,7	
Zachodniopomorskie	9 444,5	14,3	13,3	1,0	13,4	12,8	4,6	2,6	9 432,4	
Kujawsko-Pomorskie	7 938,9	19,3	18,8	0,5	12,8	9,6	3,2	12,6	7 887,0	
Pomorskie	6 511,6	13,4	13,3	0,1	9,0	8,3	0,7	5,4	6 482,5	
Lubelskie	4 729,2	10,0	9,9	0,1	7,6	4,6	3,0	5,2	4 703,1	
Podkarpackie	3 244,4	9,2	8,9	0,3	5,9	4,5	1,4	3,4	3 224,6	
Lubuskie	2 009,5	2,3	1,6	0,7	2,4	2,2	0,2	17,6	1 985,8	
Podlaskie	1 975,0	2,5	2,5	0,0	3,1	2,9	0,2	3,1	1 965,2	
Warmińsko-Mazurskie	1 592,2	3,9	3,9	0,0	2,4	2,3	0,1	2,3	1 583,3	

## Silesia gaseous pollutants emission outlook by sector



## Chapter 2: policies and strategies at national and regional level

### A/ National level

#### **Poland's limited horizontal approach**

Poland is a great industrial nation with many strengths. However, like most European countries, it is faced with the disappearance of part of its industry and in particular, national industries. Although the massive influx of foreign investments, mainly in search of cheap labour, has managed to stem the drain, it is in no way a guarantee for the future because of the low technological content of the facilities established there. Faced with this situation, Polish public policies continue to focus on attractiveness (more than on competitiveness) using tax and social incentives, substantially financed by European funds, giving a central place to direct foreign investments. Horizontal policies continue to prevail and maintain the absence of a veritable industrial policy. Polish Trade Union organizations have jumped on this absence of policy, making industrial policy one of the main focuses of their claims, proposals and actions.

#### **Industry policy back on the agenda following 2008 crisis**

Admittedly, the crisis has put industry back on the agenda in Poland as in the rest of Europe. Germany's resilience has played a key role in this transformation. However, Polish political discourse is still far from making re-industrialization, and in particular the development of traditional industry, a central objective. After the « Strategy 2030<sup>1</sup> » focus was abandoned (this strategy wanted to place Poland among the most innovative industries, in particular nanotechnology), the only reference document dates as far back as 2007 and concerns the establishment of a horizontal policy mainly based on cost competitiveness with the Special Economic Zones (free zones) as epicenter. In this document, prepared by the Ministry of the Economy, it is reminded how necessary it is to have a « *horizontal approach to industrial policy aimed at improving the international competitiveness of Polish industrial companies by setting up integrated governmental policies that support sustainable development. This objective will be possible to meet thanks to the emergence of an environment conducive to the competitiveness of companies – the creation of a suitable climate and institutional, legal and financial conditions. The horizontal actions implemented must create conditions conducive to:*

- *the increase in the competitiveness of products whether at the national, European or global level, in particular through the development of innovation*
- *the increase in productivity*
- *the increase in employment*
- *better social cohesion*
- *the limitation of pressure on the environmental balance ».*

Poland's strategy in terms of innovation is defined in a document adopted by the Ministry for Economy on August 2010, and reassessed in 2013, under the title « Framework for the strategy of innovation

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<sup>1</sup> Polska 2030. Trzecia fala nowoczesności. Długookresowa Strategia Rozwoju Kraju. <https://mac.gov.pl/files/wp-content/uploads/2013/02/Strategia-DSRK-PL2030-RM.pdf>

and economic efficiency<sup>2</sup> ». This document, which gives more a general framework rather than real action plan, underlines that competitiveness based on low employee costs and access to raw materials is now faced with growing competition from the BRIC countries (Brazil, Russia, India, China). This document sets the objective of a concentration of all efforts on the maximum use of Polish production capacities and the « *increase in innovation, i.e. the improvement of the productivity of work and capital through the search for technical and technological solutions* ». This document underlines the importance of the industrial policy, criticizes the usual short-termism of public policies and places a higher value on the idea of long term planning. From an operational viewpoint, it proposes to draw on human capital, greater energy efficiency<sup>3</sup>, and dialogue between social partners at branch and industry sector level. However the strategy proposed in this document is also based on a horizontal approach with four basic principles:

- *the creation of knowledge*
- *cooperation*
- *efficient use of natural resources*
- *strategic management*

### **The key role of Trade unions towards industrial policy**

Polish trade unions have been key players in Polish industrial policy since the first days of the period initiated by the change in regime (and even before 1989, since the various reforms adopted since 1980 were responses linked to Solidarnosc activities). They particularly played this role within the industry tripartite commissions (steel, cement, mines, glass, chemical, light industry, etc.) that monitored privatizations, as well as major restructuring programs such as the restructuring of the steel industry. Faced with the crisis, the social partners acted in different ways. In several regions, **anti-crisis committees** were created to follow up the impact of the crisis on local companies and to be able to respond to emergencies on a case-by-case basis. At the heart of discussions at the regional level was also the use of European funds managed by the regions and the review of certain priorities in order to take into account the increase in employment. The natural bodies for social dialogue at a regional level were the **regional social dialogue commissions** (WKDS).

### **The defense of industrial employment at the heart of Solidarnosc strategy**

The crisis of 2008 placed the issue of the defense of industrial employment back into the heart of trade unions' strategy. The challenge of re-industrialization has been mainly championed by Trade Union organizations that have made it a central stake since 2009. Trade union organizations defend a strategy to reinforce Polish industry and not just industry in Poland. They demand that foreign investments should be accompanied by technological transfer, call for investment in employee skills, the defense of existing industrial jobs and social control.

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<sup>2</sup> Założenia do Strategii Innowacyjności i Efektywności Gospodarki <http://bip.mg.gov.pl/files/upload/11380/zalozenia.pdf> , Strategia Innowacyjności i Efektywności Gospodarki [http://www.wrpo.wielkopolskie.pl/attachments/article/2812/strategia%20innowacyjnosci%20i%20efektywnosci%20gospodarki%20dynamiczna%20polska%202020 .pdf](http://www.wrpo.wielkopolskie.pl/attachments/article/2812/strategia%20innowacyjnosci%20i%20efektywnosci%20gospodarki%20dynamiczna%20polska%202020.pdf)

<sup>3</sup> Poland's strategy in terms of energy efficiency and low carbon economy is defined in a document adopted by the Ministry for Economy on August 2011, under the title « Framework for the national programme for a Low-emission Economy ».

## Solidarnosc program “Industrial policy: a guarantee for Employment”

In 2011, Solidarnosc published a report entitled « Industrial policy – a guarantee for Employment<sup>4</sup> » in which it made a diagnostic of the situation of the Polish industry and proposed a framework for intervention with the following focuses:

### The pillars of “Industrial policy: a guarantee for Employment”:

- *the defense of existing jobs and search for alternatives prior to restructuring*
- *the promotion of the existing traditional industry as the basis of technological innovation*
- *the requirement of technological transfers for foreign investments and strategic government contracts*
- *the ramping up of the value of the collective skills of employees of industrial sites*
- *the monitoring and anticipation of potential restructuring*
- *the upgrading of Polish natural resources (in particular coal)*
- *the promotion of social dialogue and wage control as a source of competitiveness and adaptability*

### Anticipate changes

The report recommended the widespread use of collective skills audits and *curriculum vitae* at industrial sites in order to be able to anticipate risks that could be posed by restructuring. The underlying philosophy is based on the idea that it is easier and less costly to prevent the destruction of an industrial job than to create a new one. The epicenter of employee skills thus places the issue of employment at the very heart of industrial policy by answering the question raised by the document « Framework for the strategy of innovation and economic efficiency » with respect to the optimum use of resources.

### Strengthen social democracy

The October 2014 Solidarnosc congress validated the strategic focuses of the commission by adopting a motion on industrial policy, the first sentence of which states that « *the development of the Polish economy must be based on industry* ». To the proposals developed in the 2011 report, and in particular the setting up of a site skills audit and curriculum vitae, the trade union has added requirements regarding information and consultation, in particular to be able to strengthen social control in the companies. Today the challenge for Solidarnosc is to transform the programmatic focuses into a parliamentary bill.

The priority given to the issue of industrial policy is also measured by the fact that it was one of the main themes addressed during debates organized by the three main trade union organizations (Solidarnosc, OPZZ, FZZ) during the major protests of Autumn 2013 against the pension reform.

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<sup>4</sup> Polityka przemysłowa gwarantem zatrudnienia, rapport réalisé par S.Partner en 2011 et adopté par la Commission Nationale de Solidarność





## B/ Regional level

### **The implication of trade union organizations in the governance of low carbon industrial strategy**

It is important to underline that there are no particular consultation and governance bodies strictly dedicated to low carbon and industrial policy issues in Silesia. However trade unions play a role in the governance of industrial policy through their involvement in Monitoring Committees for European Union programs financed by the ESF and ERDF as some of these programs can be directly linked to low carbon projects.

Trade union organizations take part in the following bodies:

- The monitoring subcommittee for the EU programs financed by the ESF
- The monitoring subcommittee for the EU programs financed by the ERDF

They are also involved in the following social dialogue bodies:

- Regional Commission for Social Dialogue
- Regional Employment Council
- Regional Territorial Forum of Silesian Region

### **Latest 2014 miners protests and the key role of Solidarnosc in boosting Silesia industrial policy: the genesis of the “Silesia 2.0” Plan**

The end of 2014 and the beginning of 2015 was a difficult period for the Polish coal mining industry. Few of the biggest coalmines, located in Silesia, had financial difficulties being on the verge of bankruptcy. The situation was particularly dramatic and synonymous with closure within few months, without strategic restructuring and significant help from external economic reserves. For Polish coal sector that would mean sudden wave of high unemployment in the region where majority of the inhabitants are miners or the families of the miner, shaken energy stability and collapse of one of the most important branches of national industry. In this context, Silesian miners initiated **protests** in late 2014 and an agreement was signed on January 17, 2015 between representatives of the government and the Interplant Strike and Protest Committee anticipating that a re-industrialization program for Silesia and Lesser Poland regions would be developed with the participation of social partners and local authorities through a team appointed by the government.

#### **« No program for Silesia without Silesian people »**

As no agenda had been yet proposed by March, 2015 Solidarnosc urged the government to accelerate the establishment of this program and criticized the absence of real consultation claiming that there is « no program for Silesia without Silesian people ». The “Silesia 2.0” plan was finally announced three months later indeed without consultation with any of the main Polish Trade Union organizations during this period.

#### **The „Silesia 2.0” Plan**

Poland's government (currently led by the "Civic Platform"), at its first ever session outside Warsaw, approved a multi-billion-euro plan on June, 2015 to stimulate the Upper Silesia region's industry and job market. The industry support program is actually dedicated to both Silesia and Lesser Poland Province of Malopolska. The „Silesia 2.0” focuses on a comprehensive range of development activities for these regions. The package of solutions aims at enhancing the global competitiveness of energy-intensive companies, provides for lowering the burden on energy-intensive companies in relation to the cost of financing renewable energy resources and exemption from excise duty on power for energy-intensive businesses. It calls, among others things, for tax exemptions for industries using coal and loans for modernizing Ukraine's coal-based power plants in order to increase demand for Polish coal. There is also funding for developing technologies to turn coal into gas and to lower carbon emissions, and for developing road and rail infrastructure. A draft program called E-KUMULATOR was drawn, which is to support low-carbon and resource-efficient economy. One has also provided for the development of road infrastructure (construction of express routes S1 and S69, the A1 motorway Pyrzowice-Czestochowa and Czestochowa-Tuszyń) and the railway station. The main seat of PKP CARGO (the largest railway freight carrier in Poland) shall be moved to Katowice. The plan is worth about PLN 25 billion (approx. EUR 6 billion), to be financed from the EU as well as state and local governments.

**The six pillars of “Silesia 2.0” program:**

- increasing the economic competitiveness of Silesia and Western Lesser Poland
- potential investments in the region,
- implementation of energy-efficient low-carbon economy,
- retraining of the workforce,
- integration of functions of the towns of the Upper Silesia
- legal and time framework of implementation of the plan

**A political gesture?**

However the plan for Silesia (and visit of Poland's government in Katowice) is considered by many stakeholders, among which Solidarnosc, as part of the ruling team's electoral campaign before fall general Parliamentary elections in which the opposition ("Law and Justice", campaigning for looser climate regulations in order to safeguard the Polish coal industry) is currently favored. Katowice-based Solidarnosc virulently criticized both the absence of consultation with trade unions (no trade union will take part in the Committee in charge of the monitoring of Silesia 2.0) as well as the fact that many of the measures were "old ideas" in particular in the field of infrastructure development (construction the A1 motorway had to be done in 2012 for instance). Solidarnosc also claimed that the program included some specific measures already proposed by the Union especially in terms of company taxation policy.

## Chapter 3: Local stakeholders' view

In this chapter we review the details of local stakeholders' views following provided interviews. Interviews made to date were with the following stakeholders:

- Dominik Kolorz, Head of NSZZ Solidarność for the Silesian region, unionist (worked in the mining industry)
- Grzegorz Trefon, FZZ trade union in Silesia, unionist (worked in the mining industry)
- Marek Zychła, President of "Lewiatan" Employers Association in Silesia
- Adam Gawęda, regional deputy of Silesia, Silesian Voivodship Councillor, Vice Chairman of the Committee for Economy and Innovation (worked in the mining industry)
- Stefan Dzienniak, Polish Steel Association, President of the Board (worked in the steel industry)
- Roman Trzaskalik, President of the Euro-Centrum Technological Park in Katowice (Silesia)
- Jan Brzóska, Politechnika Śląska, Vice Dean in charge of Science and International Cooperation at the Silesian Technical University

### **Sustainability of industrial jobs at the heart of trade union concerns**

For all the unionists interviewed, the sustainability of industrial jobs in Silesia – especially in energy-intensive industries such as coal mining and steel processing - remain the main concern no matter what the energy mix of the region will look like within the next decades under the impetus of the Climate Package aiming at reducing greenhouse gas emissions by 40 percent by 2030 over 1990 levels. Direct employment in the mining industry fell from 400,000 in late 1990's to approx. 100,000 today. From the union point of view, political divergence on the climate package should not narrow the defense of existing jobs or even the potential development of industrial local employment in the future.

### **"Cleaner carbon for a cleaner air"**

For the Trade Unions interviewed the "carbon exit" is still synonymous with a direct threat for the stability of jobs in the Polish coal mining industry. Nevertheless we noticed during interviews a certain awareness on environmental friendly industry issues (despite skepticism towards global warming among certain unionists) from which a consensus seem to have emerged towards the necessity to breath cleaner air in Silesia not necessarily requiring a single "carbon exit" and drastic change in Poland's future energy mix ("*we don't want a Carbon exit but we want to breath clean air*"). As a matter of fact stakeholders often cited solutions towards cleaner carbon as good practices, such as carbon gasification at company Grupa Azoty S.A.. or at Wieczorek mine (which are part of the Silesia 2.0 plan). A project of power plant based on coal gasification, also cited, is under study at Kedzierzyn-Kozle (see below).

**The Kędzierzyn Zero-Emission Power and Chemical Complex** is a proposed facility in Kędzierzyn-Kozle that would combine power and heat generation with that of chemical products and carbon capture storage. The project was proposed by a consortium of chemicals producer Zakłady Azotowe Kędzierzyn and electricity company Poludniowy Koncern Energetyczny. The plant is supposed to produce gas by gasification of hard coal. The produced gas would be used for power and heat generation or for production of chemicals. The plant will capture produced carbon dioxide (CO<sub>2</sub>) which would be stored in natural geological reservoirs or used as a raw material for production of synthesis fuels, fertilizers or plastics.

### **“Low emissions, not just low carbon”**

Stakeholders insisted on the fact that friendly environmental industrial policy should not just focus on the low carbon approach but take as well in consideration remaining existing technological solutions towards lower emissions (as a whole) such as the processing of methane, cited as a good practice at the mine of Knurów (sold to JSW by Kompania Weglowa) or the mine of Brzeszcze (where protests started in late 2014). Methane processing can be used to produce electrical energy, heat and cold. According to OPZZ trade union only one third of methane rejected by the industry is currently being processed in Poland.

### **Silesia needs more time (or money?) to transform its energy mix**

There is still skepticism over the climate package timeline for Silesia. For all the stakeholders, from unionists to employer representatives, more time is needed to the region to be able to sustainably modify the country's energy mix on the basis of existing feasible technologies. That is the reason why trade unions insist on the necessity to both secure price competitiveness in the near term (by fiscal measures allowing better energy cost control) and create more favorable conditions for the introduction of new clean technologies in the industry, which will certainly require sustain financial aid from the European union. For instance, the zero emission power facility project remains currently cost prohibitive for Solidarnosc, according to which funding request has been however sent in the rame of Juncker plan. It has to be mentioned that the nuclear plant planned to be built in Poland was not o major topic of discussion with stakeholders and was only mentioned by two respondents.

### **The key role of regional operational programs over the period 2014-2020**

Another important issue for the people interviewed remains the fundamental role of the region in the allocation of funds dedicated to low emission projects. Most of them pledge for a better allocation of the next 2014-2020 European funds through the regional operational programs. Measures should be taken to allow regional operational funds to give a major lift to Silesia technological development towards cleaner industry footprint.

### **Anticipate needs in skills and (re)training**

The monitoring of skills and training needs will be a major issue for the trade unions in the coming years whatever the future energy mix will look like. Coal mining industry has suffered since the 1990 and uncertainty remains on the future of the remaining 100,000 jobs of the sector. Stakeholders insisted on the fact that a better anticipation of change in the industry would be necessary to maintain jobs for thousands of miners even in the case of unavoidable professional change in careers. Trade unions recognize that Silesia thus needs adequate training structures and policies to facilitate potential retraining for thousands of people. Some cited existing small operational structures at the Silesian Technological Park which has already trained thousands of people (of which former miners) in particular in the field of solar panels and low emission coal fire places for the housing sector. The capacity of these structures in terms of number of seats remain however modest regarding total industry employment in the region.

## **Chapter 4: Environmental policy and Poland 2014-2020**

With € 82.5 billion over the period 2014-2020, Poland is again the largest recipient of EU funds. European funding now will go primarily towards infrastructure and the environment but also the research, development and innovation in order to upscale the Polish economy.

### **Infrastructure & Environment, Research & Development: the two pillars**

The partnership agreement signed between the European Commission and the Polish government gives room and space to the "Infrastructure and Environment" pillar with € 27.4 billion, of which more than € 9.0 billion dedicated to investments linked to low carbon economy and energy efficiency through regional operational programs.

The second pillar, "Research, Development and Innovation" is also richly endowed with € 13.0 billion. It will target environmental technology, focusing on the following sectors: waste reduction, sustainable transport, eco buildings, water saving technologies, raw material substitution, production of healthy food... in order to increase the country's share of GDP devoted to R & D from 0.90% in 2013 to 1.70% in 2020.

### **A particular emphasis on energy efficiency**

With regard to energy efficiency projects, priority development areas will be as follows:

- Production and distribution of energy from renewable sources
- energy efficiency and renewable energy use in enterprises
- Energy efficiency in public buildings and in the housing sector
- The implementation of low-carbon strategies
- high-efficiency cogeneration

Among projects under priority axis of energy efficiency, the vast majority relates to thermo-public buildings (thermomodernization) such as schools, hospitals, offices.

## **Increasing experience in environmental projects**

Meanwhile, Poland is adopting a “greener” tax and financing fiscal system trying to move towards more efficient use of available funds, including through the National Fund for Environmental Protection and Water Management (NFOSiGW) and sixteen regional funds. In 2012, income from environment-related taxes was 2.2% of GDP and 6.8% of revenue compared with OECD averages of 1.6% and 5.5% respectively. Increasing transfers of green competences between international and Polish companies also participate in the professionalization of the environment sector in the country.

### **Potential drivers of the Polish green growth:**

#### **The Action Plan for Energy Efficiency (EEAP)**

The EEAP aims to reduce the energy intensity of the country, currently 19% higher than the average for European OECD countries. The Polish industry, the building sector and district heating networks increasingly mobilizes technicians and engineers specialized in energy efficiency.

#### **The reform of municipal waste**

The need for investment to improve the management of this waste is estimated at € 6.0 billion per year between 2014 and 2020. Only 80% of the population benefit from a waste disposal service and 75% of waste is dumped, against 45% on average for the OECD.

#### **The modernization of the recycling industry**

Poland has still very low recycling rates and many waste deposits are being unexploited.

#### **The consolidation of the water management and treatment sector**

This consolidation should accelerate through the reform of the law on public-private partnerships. In rural areas, only 30% of the population remain connected to a water treatment plant.

#### **The modernization of electricity production means**

Over half of plants have more than 30 years, 2020 will be the year of mandatory decommissioning of many coal plants, many transmission and distribution networks remain outdated. The IEA estimates the necessary investment to € 195 billion over the period 2010-2030.

#### **The development of renewable energy and smart-grids**

In 2013, 10% of the country's electricity was renewable, less than half the OECD average. The energy bill now allows the connection of renewable energy micro-grid installations to the network. The Polish plan for the production of green electricity, supports as well residential and collective housing projects until 2022, with nearly € 190.0 million endowment that the renewal energy sector will benefit from.