

## Deliverable Proof – Reports resulting from the finalisation of a project task, work package, project stage, project as a whole - EIT-BP2020

<b>Name of KIC project the report results from that contributed to/ resulted in the deliverable</b>	A BOOST FOR RURAL LIGNITE REGIONS WP1: developing a mutual understanding of regional ecosystems Case study: Lusatia
<b>Name of report</b>	Mental Landscape Report Lusatia
<b>Summary/brief description of report</b>	Lusatia is one of the largest and most profitable lignite regions in Europe. With the coal phase-out, more than 8,000 people will lose their jobs, value chains will be interrupted, and structural change will be driven forward. To understand which obstacles and support factors influence a region in transformative events, stakeholders with different interests are asked about their assessment of the process.
<b>Date of report</b>	30.12.2020

**Supporting Documents:** attach in pdf format

# **REBOOST**

## **Mental Landscape Report Lusatia**

### **Summary**

The first work package of REBOOST is to collect data from the three case studies in the region of Lusatia (Germany) in Konin (Greater Poland) and Gorj (Romania). This report refers to the case study in Lusatia in the very east of Germany, in the middle of Europe. It is the largest open pit mining area in Germany and supplies more than 14 million households with electricity. Apart from that, the owner LEAG also has other power plants in the Central German area.

The coal phase-out in Germany was worked out with the local stakeholders through a development law. This draft was approved in 2020 and is already being implemented. Structural aids of more than 40 billion euros will flow into the regions in which the power plants and opencast mines will be closed by the year 2038. Germany relies on sustainable electricity. Nonetheless, the discontent in many German states is very noticeable. Citizens fear that electricity prices will rise rapidly and that energy will have to be imported from abroad.

The exit from coal production is inevitable. In order to achieve the Parisian climate goals, the European pioneer Germany is still very late with a complete phase-out of coal in 2038. To stay below the 1.5 degrees that make climate change inevitable, we need faster implementations all over the world.

However, the speed that is required of scientists is far too risky within the regions that live from lignite. The rapid change means loss of jobs, economic downturn and the associated empty regions that are left behind. For citizens this means mental resignation and fear for their homeland.

Scientists are now researching in these regions how change can succeed without taking negative influences into the future and shaping a common region. REBOOST comes into play here and seeks dialogue with the local actors who are already involved in their home country. It is important to understand what the tasks are, what ideas do actors have for the future, where can projects get support from, how citizens can work together and which barriers to overcome.

In Lusatia, many actors and scientists are on the way to create a model region of the coal phase-out scenario. The networking and the start of implementation strengthens the courage to continue devoting oneself to the task. But the barriers are demanding ever greater efforts by individuals to continue to get involved. That hinders the process. So, it was necessary to break down these barriers and overcome them with joint strategies. The strengths of the region must be emphasized to implement the visions for 2038 and to become a successful model for other regions that follows the Lusatian one.

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## **1. Introduction and research motivation**

“A Boost for Rural Lignite Regions” aims to develop an online simulation tool that will be used for stakeholder engagement in three European energy transition areas. The project focuses on three regions: Lusatia in Germany, Eastern Greater Poland in Poland, and Gorj in Romania. Hereby, we strive to involve and empower local stakeholders in European coal regions to develop resilient and robust sustainable strategies as part of the European Green Deal Investment Plan and Just Transition Mechanism. The project takes place over the course of three years (2020-2022) and in the end will also explore the possibilities of actual implementation of promising future development options.

In the first project year, REBOOST is focused mainly on understanding the study areas, the stakeholders' perceptions and attitudes, the so-called mental landscape which encompasses the manoeuvre spaces as well as the barriers to and opportunities for decarbonisation actions. Hereby, the emphasis is placed on how the stakeholders see their own current and future situation and not on how it actually is in terms of a scientific analysis of their economic, social and political situation. The subjective approach is based on the idea that the mind-sets of the involved actors not simply reflect their current economic situation but are strongly influenced by what future developments they consider possible, most likely to happen or impossible, and by the opportunity space they see for their own asset structure. In our view, this perspective is crucial when it comes to orchestrate social transition processes. The knowledge gathered in the first year will be used to design three strategic simulations in which selected stakeholders from the three study areas will be asked to experiment and explore possible future transformation pathways in an interactive manner: through an online simulation tool. In this regard, interviews and strategic simulation techniques will be used to ensure the participatory character of the project and to create supportive conditions for knowledge co-production process in which local stakeholders play an active role.

According to Denzau & North (1994) mental models are defined as pre-existing mental constructs which people employ to interpret and understand an environment. These are then subsequently used to solve the problems they face. In this sense, it is heuristics that allow for classification and retrieval of information's about situations, objects and environments based on the most prominent characteristics (Cannon- Bowers; Converse & Salas, 1993). In this heuristics process, both the complexity of the problems and the abilities of individuals to deal with different levels of complexity are important in mentally organizing the surrounding environment. Such mental models are shared through communication and lead to the co-evolution of formal and informal that structure interpersonal relationships, so-called institutions (North, 1990). Such mental models and institutions reduce uncertainties in decision-making as they structure our expectations about the environment and thereby

describe, explain, and predict behaviour of other individuals in this environment (Denzau and North, 1994).

Mental models are more than simple mental handholds to understand the environment. As these mental representations of the world are typically incomplete, they are flexible and subject to manipulation (Besnard et al., 2004). As a result, when unexpected events happen that the mental model did not accurately predict, this leads to a correction of the employed model. In a complex environment, the information is insufficient or contradictory to enable corrections and multiple ideas on how to address a particular problem remain (Denzau and North, 1994). Incomplete mental models in such a correction, lead to decisions which have an adverse effect (Forrester, 1991). Several authors have analysed the importance of such corrections (Schoell & Binder, 2009; Pahl-Wostl & Hare, 2004; Schulster et al., 2003).

For the energy transition in the three chosen European transition areas, we argue that insecurity about the future, increases complexity and makes it more difficult to describe, explain and predict the environment. Denzau and North (1994) proposed that individuals form theories that enable them to deal with problems characterised with large uncertainties, through mutual communication of ideas. In this sense, mental models converge for individuals that have common backgrounds and experience (stakeholder groups) and diverge for individuals with different learning experiences. Thus, the learning process in uncertain environments is not fast enough and this process is accelerated if individuals can learn or correct based on mental models already established by like-minded individuals. Sharing mental models increases understanding but also strengthens already existing mental models. In addition, Vatn, (2005) brings forward that efficient sharing depends on the type of values an individual wants to protect. In the context of this mental landscape report, we can expect that interpretations on how to transition away from coal varies across societal groups and their analogous experiences and will keep diverging as the transition environment remains uncertain.

The objective of this mental landscape report is to explore the differences in the perception of the shift away from coal among different stakeholder groups. In this rationale, mental models are internal mental constructions which interpret and structure the (transition) environment (Denzau and North, 1994). In this report, we explore the differences, but more importantly similarities on ideas how to adapt and govern major groups of stakeholders involved in the transition and development process in the three regions. For Gorj, the experts were selected to represent five groups: Administrative organisations (e.g. Employment and statistical agencies), public organisations (e.g. Municipalities and governmental agencies), private 'contractors' tightly linked to the government (Water management Gorj, Oltanea Energy Complex) and service companies (e.g. Consultancy, training).

This report is part of a series of four analogous reports, one for each case study area complemented with three policy briefs on the mental landscapes and three policy briefs providing an in-depth review of the political economy of the energy transition in Poland, Germany, and Romania. Furthermore, three extra policy briefs will be produced to illustrate the challenge of regional coal phase-out and structural change as a multi-level problem, within the regional innovation system of the respective regions. Hence, the solution is to establish a framework that focuses on the analysis of (regional) innovation system and smart specialisations. Hereby, we facilitate follow a comparative approach between the involved regions in Germany, Poland, and Romania. We assume that mutual learning will be a core asset of the project in the view of the local actors, especially if we consider them being peripheral regions. Taken together, the reports and policy briefs close of the first (successful) project year.

The remainder of each report is structured as follows: In section two, the methodological approach and study design are described in detail. In the third section, the policy landscape is delineated after which the results of the mental landscape mapping are systematically addressed, and general outcomes of the interviews are provided in section 4. A short conclusion is provided in section five to complete the report.

## **2. Research Approach**

The work summarised in this report evolved around three steps. First, we explored the political, socio-economic and geographical characteristics of the regions. Such a landscape screening helped us to identify key stakeholders (see step 2), and to identify key arguments/viewpoints (see step 3). In a fourth step, we have organised a strategic simulation workshop with selected stakeholders simultaneously in the three regions.

### *2.1 Scoping*

The concrete research objective for this year was to get detailed insight of the views of stakeholders for their own region and the current situation of the coal mining. This requires awareness of attitudes, needs and preferences as well as understanding of the current situation of different stakeholder groups. To get to know the different situations of the three case studies, we started with desk research. Although, concrete studies on coal mining regions in Konin and Gorj are rare, it still provided us with a satisfactory picture along which we could structure our interviews. In contrast, in Lusatia various studies have been undertaken already, most of them based on qualitative and quantitative data of businesses in the private sector. The studies focused on the future pathways for industry, both from a cultural point of view and an ecological point of view. However, the available data does not often show the standpoints of different interest groups. More likely, they show strategies that only apply to a single organisation and the effort to achieve its aims. Hence, in all three regions, we had to hold interviews with opinion leaders about the future: the main problems and difficulties but also strengths and future strategies.

## *2.2 Stakeholder identification*

As a second step, we have identified the key stakeholders in the three regions, their roles, objectives and scope of action to engage expert interviews. We also assessed the stakeholders according to a power-vs.-influence map. Such stakeholder mapping helps to identify possible stakeholder coalitions as well as mutual and conflicting interests. This step was particularly relevant for the Gorj county since this region is currently the most distant from getting on the transformation pathway. Hereby, we have actively searched for potential problem owners at the national and international level to find international companies that might be interested in investing in low carbon solutions in this region. Furthermore, it was assumed that interests, involvement, education and financial means influence the coal phase-out. Therefore, we also carefully determined and choose actors that were present in the media and were expected to be effective when implementing the (planned) respective processes.

## *2.3 In-depth Interviews and deep listening*

We carried out in-depth interviews framed as ‘deep listening’ with key stakeholders in the study regions. The aim of the interviews was to identify the important stakeholder groups and existing discourses, map stakeholders’ interests and perceptions, possible options for the regional transformations, as well as the opportunities, costs, risks and fears that different stakeholder groups associate with these transformation options (Otto & a.m., 2019; p. 5). We created a guided interview around five questions, which also allowed for potential add-in questions.

The interview contained the following questions:

1. Please explain your work / your commitment in relation to the region?
2. What are the advantages / strengths of the region from your personal point of view?
3. What main problems / difficulties can you identify?
4. Do you feel noticed and understood?
5. What do you expect from the future? (Since you have specific ideas, who could be responsible for the implementation in this case?)

This kind of interview is defined by Flick et al. (2016) as an episodic interview. Such episodic interviews foster a narrative form through which respondents can explain their opinions, experiences and visions in relation to an object (Flick, 2016, p. 117). In this rationale, two questions were added at the end of each interview:

6. Would you like to say / add something else?
7. Would you be willing to take part in an online workshop that simulates the future?

In many cases, we presented the project on the phone to the chosen actors and inquired after interest and availability for an interview. When interested, we sent out more elaborate information via email. Due to the Covid-19 pandemic situation, many interviews were held via zoom (also taking into consideration security reasons). The interviews had been recorded and transcribed and translated using the software Happy Scribe. is done by an online tool that can immediately translate the interviews into English.

#### *2.4 Strategic simulation workshops*

Information gathered in the previous research steps was used to construct a framing for the strategic simulation workshop and to provide basic options that could be further explored and modified during the workshops. The aim of the workshop was for the participants to create and explore future transformation pathways. Strategic simulation, a type of serious games, also known as policy simulations, is an interactive, participatory method to develop strategic insight. Within scenarios, stakeholders use their knowledge and available data in deliberative manner to develop strategies that can lead them to desirable futures, identifying challenges, seeking solutions, and negotiating trade-offs.

The simulation will be prepared in 3 versions, each adapted to the characteristics of a different region and carried out at the same time in each region through online sessions. In this regard, the workshop provided us with information about the concrete positions of stakeholders, manoeuvring spaces, mutual perceptions, and to select the appropriate method for steps in the next year. Moreover, elements were translated to the national languages to be more accessible to all involved stakeholders. During each workshop, there was ample of room to ask questions and provide feedback.

### **3. Regional Context – Lusatia in Germany**

#### *3.1. Germany and energy policies*

Although the use of coal for energy generation is showing a declining trend, coal is still a major player in the power generation sector of Germany. The German government had set itself the goal by 2020 to reduce 40% of CO<sub>2</sub> emissions since 1990. This was possible because of the Corona Crisis this year, due to less traffic and less demand for production and industry. Germany saved nearly 5% more as expected which corresponds to emissions of around 750 million tons of CO<sub>2</sub> less than 1990 (Schatzmann, 2020). In general, the coal consumption fell from 56.7 % in 1990 to 35.4 % in 2018, (BMW, 2020). Traditionally, the coal industry has been very strong in the energy sector but is also subject to growing critique, especially from environmentalists since coal is the largest GHG emitter among all power generation systems (Osička et al., 2020). According to (Rockström et al., 2017) it is necessary to have a world-wide coal-phase out by 2030 to stay in line with the Paris agreement. In reaction to this urgent matter, the German government set up the *Commission for Growth, Structural Change and Employment* on 6<sup>th</sup> June 2018 to advice the German government on a coal-phase-out. Their work focuses on future visions for employment opportunities in the regions, an investment plan for the transition,



measures to reduce energy generation by coal plants and to set a certain date for the coal phase-out respective to economic, social juridical and political circumstances. Their findings were presented in January 2019 (BMWi, n.d.)

In short, the coal commission advised to grant 1.3 billion euro a year to the affected regions for structural policy measures as well as an additional 0.7 billion a year independent of the project over a period of 20 years, as well as emergency programs until 2021. To create more than 5,000 jobs replacing former jobs in coal power plants, the commission recommends finding new federal and state authorities in the regions. To make the region further attractive, transport infrastructure projects shall be implemented and 5G model regions set up (BMWi).

Probably, the most important recommendation of the commission is to implement a coal-phase out until 2038, reducing the coal fired power plant capacity step by step, planning to reduce them to 30 GW in 2022 and 17 GW in 2030. This aim would also help the government reach their target (set in the Climate Protection Plan 2050) to limit the whole energy industry to 180-1988 million metric tons of CO<sub>2</sub> by 2030, according to the German Federal Ministry for Economic Affairs and Energy (BMWi). Many environmentalist experts however criticize that the date set for the coal phase-out is too late, especially the shutting down of lignite –fired power plants (Deutscher Bundestag; 2020).

To implement the coal phase-out the commission highlights the necessity to find a solution with lignite-fired power plant operators, which is then implemented by law. The commission mentions the offer of degressive voluntary decommissioning premiums until 2030 as well as compensation payments where needed. It should be the aim to expand renewable energies to 65% of electricity consumption by 2030 and consistently expand transmission and distribution networks. Furthermore, companies and citizens should be relieved of potential electricity price increases by compensation. The commission deems it necessary to make the switch from coal to gas more attractive for plants with combined heat and power (CHP) and further develop CHP into a flexible power-heat system. Old CO<sub>2</sub> certificates should be deleted (BMWi).

In general, the commission emphasizes the necessity to monitor all measures, including the obligation of the German government to submit reports on the status of implementation on a regular basis / 2023, 2026 and 2029, which are then to be checked by an independent expert panel (BMWi).

The German government currently implements all these suggestions and works on draft legislations. In May 2019 “Cornerstones for the implementation of structural policy recommendations”<sup>1</sup> of the commission was adopted by the federal cabinet (BMWi). The *Act on the Phase-out of Coal-fired Power Plants “Kohleausstiegsgesetz”* and the *Structural Reinforcement Act for Mining Regions “Strukturstärkungsgesetz Kohleregionen”* were adopted on July 3<sup>rd</sup> 2020 by the German Government, including the recommendations of the aforementioned commission into practice (BMWi)

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<sup>1</sup> „Eckpunkte zur Umsetzung der strukturpolitischen Empfehlungen”

### *3.2. General characteristics*

One of the three areas for coal mining is Lusatia. Today there are 8.116 people working directly for the mining pits and power plants in Lusatia. More than 13.000 jobs are indirect such as suppliers and direct dependent on coal mining industry (Staatskanzlei & Lausitz-Beauftragter des Ministerpräsidenten, 2020, p. 6).

The Government of Germany alone is providing 40 billion euros to shape structural change positively. 17,2 billion euros only for Lusatia (StSG, §3). This money is supposed to support the people and prevent the a new transformation as in the ninetieth<sup>2</sup> where many people lost their jobs and left the region. The actors, mayors, politicians and all the other engaged stakeholders try a lot to help the region with different investigations and discourses between the EU, government, state, districts, or as private people. The demand from the Lusatian stakeholders to the government and EU are a social de-carbonisation process to avoid the so-called structural break.

Lusatia is a region located in two states of east Germany, Brandenburg and Saxony, on the border to Poland and Czech Republic. In the south of Lusatia are two districts of Saxony: Bautzen and Görlitz. In the south of Brandenburg, on the border to Saxony is the district of Oberspreewald-Lausitz, in the east there is the city of Cottbus and the district Spree-Neiße. The western district is called Elbe- Elster and in the north, southern of Berlin is the district Dahme-Spreewald (RLS; 2019:19)

The area of the Lusatia covers 11,727 km<sup>2</sup> and is therefore more than 13 times the size of Berlin. With 99 inhabitants the population density is clear per km<sup>2</sup> below the national German average of 230 inhabitants per km<sup>2</sup>. Ever since the region's identity was defined by the coal mining. 150 years ago, people started with the extraction and industrial process of coal in the 19<sup>th</sup> century (mdr.de, 2020.). 100.000 people worked in the coal mining sector by the end of the DDR in Lusatia. Industrial giant cities were constructed in few years.

Since the reunion of Germany, Lusatia loses population steadily. In 1995 the region had 1.432.730 habitants, 20 years later in 2015 only 1.165.246 inhabitants remained. Since Lusatia lost 18,5% of their citizens (IAB, 2018, p. 11). After the political reunion, more than 25% of employed workers lost their jobs because they weren't worthwhile in the new system. Next to the job losses, citizens migrated to the western parts of Germany to get all the opportunities they were fighting for during the peaceful revolution. The workers who wanted to stay in Lusatia experienced severe setbacks.

One consequence of transformation which is now a big issue in Lusatia is the demographic change. The number of people older than 45 years is significantly higher than the people younger than 45 years. In 1995, the average age in the Lusatia regions was between 38 and 41 years. Because of the departure,

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<sup>2</sup> These repercussions of the ninetieth are still present 30 years after the reunification. But today, there are also strong emigration, demographic change, and the coal phase-out as problem factors. There is a lack of trust and confidence for the future. One more reason that right-wing populist parties find a large audience for your election campaigns (Gesellmann, 2019).

especially of young people, after 15 years, in 2010, it was 7 years higher up to 45 to 48 years<sup>3</sup>. Earlier, in Lusatia, 413.666 employees counted were subject to social security contributions. Of which 301.272 employees commute to work every day. The average wage in Lusatia is 2,420 euros per month (ZWL, 2018, p. 12 cc). The average wage in Germany in 2019 is significantly higher by 2,994€ per month (statista, 2020).

Since the 17<sup>th</sup> century, Lusatia has been one of the most important regions for energy in Europe. “A diverse economy has developed in the region- from metal processing, the plastics industry and the chemical industry as well as food industry and traffic engineering”(WFBB & WFS, 2018, p. 18).

The smallest economic sector in Lusatia is agriculture, forestry, and fishing. The second sector is the production based economy. The proportion of metal, electronic and iron is nearly 9,5 %, construction nearly 8% and mining for energy, water and energy economy is a little bit less than 4%. The biggest sector of economy in Lusatia is the different economic services which differs in following parts:

- 12.00% of trade, maintenance, repair of motor vehicles
- 9.29% homes and social services
- 7.32% Public administration, defence, social security, external organizations
- 7.20% healthcare
- 6.93% traffic and storage
- 5.01% other economic services (without temporary employment) (ZWL, 2018,. 7)

In Lusatia, the unemployment has been shrinking for years. This shrinking rate can be explained with an economic upswing in Lusatia over the years. Lusatia is on high demand for staff and skilled workers. The effects of demographic change also influence the number of people of working age (Stölzel, 2019, p. 28).

At least since the recent European elections, the AfD in Lusatia has been the strongest party in almost all regions<sup>4</sup>. The only exception is the Dahme-Spreewald district, where the SPD is at the top. This can easily be explained by the in and out commuters and the proximity to Berlin. In the last election periods the CDU and SPD lost their chairmanship to the AfD in most of the districts. The CDU lost more than

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<sup>3</sup> Reasons for this can be traced back to the time of reunification as well. The politics in DDR helped women to arrange a full-time job and family. In Lusatia there are more employed women with kids than in western Germany (Domscheit-Berg; 2016, n.d.). But the rate of younger woman is shrinking for years, because a lot of women of childbearing age are leaving the eastern regions. A study from TRAWOS Institute shows that “a surplus of men has developed, which reflects a disproportionate departure of young women and a higher return rate of men”. Reasons are the job opportunities and offers in other regions, higher mobilisation and better infrastructure and the attractivity of bigger cities (cf. Gabler et al., 2016, 18)

<sup>4</sup> In Germany there are 6 main parties in the government, which are also leading parties in Lusatia. The CDU / CSU are the Christian Democrats. Angela Merkel from the CDU has been the Chancellor of Germany since 2005. The SPD are the social democrats who form coalitions with the CDU in the german parliament. As a party, “Bündnis 90/ Die Grünen stand for environmental politics, ecological, economic and social sustainability. “Die Linke” is a left, democratic-socialist party. “Die Alternative für Deutschland” is a right populist, partly right extremist political party in Germany. It was founded in 2013 as an EU-skeptical and right- liberal party. The “FDP” is a liberal party in Germany that stands in the center on the political spectrum.

10 percentage points and the SPD by 5 percentage points. “Die Linke” has also lost between 6.5 and 7 percentage points per district. Since the climate debate and Fridays for Future, the Greens have been looking forward to an upswing. The global climate strike by children and young people also seems to have an impact on political citizens in their decision-making power. Lusatia has been known in the media again and again since the 1990s. The lack of GDR integration policy and the rapid reunification brought many problems with it. Hoyerswerda and Bautzen became known primarily for the violent riots against migrants in the last 30 years (Steinberg, n.d.). Nearly all the German parties support the joint work in the European Parliament. For them, the EU is a clear symbol for security, peace and cohesion. For the left parties, the current cooperation is not enough. They want an EU commission with more social, democratic, ecological responsibility. They do not accept the current applicable EU treaties. The AfD is against the European Union. It sees the other countries of Europe as friends and neighbours but does not recognize them as a constructively united states in Europe.

The European collaboration is important for the aims of the “Green Deal” to be carbon neutral in 2050. The main responsibility of the EU is to set an example for other countries. 20% of the world's emissions are caused by European countries. Europe's responsibility is enormous. In addition, it must be a model for China and the USA in negotiations (SRF, 2019).

Most people who work in NGO's and organization for socio culture in Lusatia are dependent on the civil society. All the districts in Lusatia have an online exchange platform to convey information to committed people. Because of the new organisation of cities and engagement under shrinkage conditions, the last years led to a transformation of the civil society as well. Important stakeholders helped through this transition with guidelines or online- databases, where civil engagement is needed and well seen. Because of the shrinking society and high aged population, the terms changed as well. There are not enough people with enough capacities to work (mostly) for free. There are still large gaps to fill in through civil engagement organisations. People create their life-space in socio culture in public places or the fire brigades in towns or villages. People with higher education rather work in civil engagement projects. There is a centre of actors for each region that mostly stays the same. The numbers of engaged people in Saxony and Brandenburg is very low in comparison with western and southern parts of Germany (Behr et al., 2000, 2000; Gensicke et al., 2009, S. 77–85; Rundschau, 2016; Stölzel, 2019, S. 33). In 1995, „Kulturraum Oberlausitz- Niederschlesien“, started with the first funding for projects in Bautzen and Görlitz. More than 20 projects applied for this money. After the DDR, it was an important step for all the socio-cultural centres in Lusatia to strengthen the self-determination and critical design of their role in the civil society. The stakeholders of socio culture describe themselves as low threshold offers for creative and cultural education, as open meeting points, socio-political confrontations and helping spots for all social classes (Pilz, 2012). The funding in 2020 for institutions located in Bautzen and Görlitz had been 16.118.000,00 € The project received a fund of 746.575,02€

in 2020. The investigations for Upper Lusatia / lower Silesia had been about 528.400,48€ (Kulturraum ON, n.d.).

Lusatia has been the home of the Sorbs since the 6th century. Its culture and history are particularly impressive around Easter with their customs (WFBB & WFS, n.d.). They shape the coal region economically, culturally, and socially. Coal mining has been a burden for the Sorbs in the Lusatian district for centuries. Around 20,000 Sorbs live in the Brandenburg part of Lusatia, and 40,000 in Saxony. They went to great lengths to preserve their language, culture, and identity. The Sorbian capital is Bautzen. There is the Association of Lusatian Sorbs e. V., and the only bicultural theatre in Germany, the German-Sorbian theatre Bautzen (Öffentlichkeitsarbeit Sachsen, n.d.).

The Sorbian language is considered a trait and identity. Upper Sorbian (hornjoserbšćina) is spoken in the saxon part of Lusatia (similar to czech / slovak language) and Lower Sorbian (dolnoserbšćina) is spoken in the Brandenburg region (more similar to polish). Lusatia is characterized by bilingual name signs for places and buildings in German and Sorbian. Examples for Upper Sorbian part: Crostwitz / Chrósćicy; Nebelschütz / Njebjelčicy and Räckelwitz / Worklecy; Radibor / Radwor. However, native speakers of Lower Sorbian can be found in Cottbus and the surrounding villages. Transitional dialects: Bad Muskau / Mužakow, Runde / Slepó; Hoyerswerda / Wojerecy. At the University Leipzig, the Institute for Sorbian Studies / Institut za sorabistiku trains teachers for Sorbian language and literature in Upper and Lower Sorbian and Sorbian (geschichte und sprache, undated).

### *3.3. History and role of coal mining*

People define their home and personalities by their mining careers and history. People define themselves by the history and the money, the impact they have with the lignite mining. It is not only a big part of industry and economic impact for Lusatian people. It is a feeling they share with each other (360° Lausitz, n.d.). The economics of Lusatia has been based on lignite mining for over a hundred years. During the early industrial phase in the first half of 19<sup>th</sup> century coal mining started with little pits from small business owners as fabricants, traders or lords of knights. The hard work in underground mining was mostly done by sorbs because they lived in the surrounding villages. Despite the hard work, there was an oversupply of workers and wages remained low. Germans who moved there acted as supervisory staff.

Berlin entrepreneurs in 1871 turned the opencast mines into a large-scale industry and later switched from steam to electric drive. Many farmers gave up their agriculture to work in the pits all year round. The region became attractive. Now there was a lot of work, immigration and fewer Sorbian miners. There have been numerous new technical developments. 192 conveyor bridges were used for the first time. Conveyor bridges were used for the first time in 1920. As a result of the integration into the armaments industry in World War II, Lusatia grew into a unified economic area. After the end of the war, the coal mines and their technical achievements were also sequestered. The self-sufficiency of the

GDR transformed the Lausitz district into one of the largest metropolitan areas. In the last centuries, 136 villages with a total of around 30,000 people had to leave their homes to coal mining (Förster, 1995, S. 13–21). Their houses were replaced in other parts of Lusatia. The most important was the coal mining and the resulting quality of life. The energy supply in GDR was highly dependent on Lusatia. Around 100.000 people worked in the coal industry.

After the reunification of Germany more than 8 pits were closed and more than 80.000 people lost their jobs which corresponds to 90 percent of all workers in the energy sector in Lusatia. The emigration started. The biggest exit has already happened - 20 years ago. But many citizens not only lost their jobs while the borders opened, they also lost the trust in reunification and the democratic side of the united Germany (Machowecz, 2019). One reason was the new institution for a new German companies called trust hand. “The *Treuhandanstalt* should make 9,000 state-owned companies with a total of 4.1 million jobs "marketable" within a very short time. The companies were privatized or liquidated. Millions of people were left unemployed”(Kaune-Nüßlein & Scharenberg, 2019, p 6 cc) The Treuhand has sold 80 percent of all operations in the GDR to West Germans. 15 percent to foreigners. And only five percent to East Germans (Gesellmann, 2019). The consequences can still be felt today through:

- economic and social divide between East and West Germany
- no equivalence of living conditions
- Small economic structure in the east
- a lack of large industrial companies
- less salary for equal work<sup>5</sup>
- East Germans underrepresented in management positions

(Kaune-Nüßlein & Scharenberg, 2019, p. 7)

These repercussions are still present 30 years after the reunification. But today, there is also strong emigration, demographic change, and the coal phase-out as problem factors. There is a lack of trust and confidence for the future. One more reason that right-wing populist parties find a large audience for their election campaigns (Gesellmann, 2019).

Through active destruction of companies and non-rental investments many people were left unemployed. They lost their patience and trust in the reunification of Germany (Kaune-Nüßlein & Scharenberg, 2019, p. 7). Till today one factor that moves the western states of Germany is, that still 30 years after the reunification people in the “old states” of Germany get higher wages for less work (*manage it / IT-Strategien und Lösungen*). Another reason for Lusatian citizen to fight for the coal industry is the payment! The coal sector pays above average high salaries to their workers in different positions. The fear in dependence with the phase out of coal is a repetition of the ninetieth and not only the downturn of an identifying industry but rather the death of a whole region. The east Germans felt

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<sup>5</sup> The east lags the west in terms of income and wealth. In eastern Germany, for example, according to the 2017 remuneration atlas of the Federal Employment Agency (as of January 31, 2019) geriatric nurses receive 499 euros gross per month, mechatronics 755 euros and bricklayers even 955 euros (Kaune-Nüßlein & Scharenberg, 2019, p. 7).

betrayed by the political promises for the future after the reunification during the radical downturn in the ninetieth and the fear of an absolute economic desert.. This tore a huge cut in the résumés of many. However, those who could continue working in the coal industry could look forward to a secure future. This image is still valid today. The lignite mining and power plants in Lusatia enjoys a good reputation with its residents. There are four active lignite mining areas: Jänschwalde; Welzow-Süd, Nochten and Reichwalde and three power plants. The second biggest employer in the region is their operator. LEAG has 8000 employees, 700 trainees from 13 different countries (LEAG; 2020). Nearly 20.000 people who are dependent on the lignite industry as service providers or suppliers are affected by the transition (LAZ, n.d.)

LEAG belongs to the Czech Energy company Energetický a Průmyslový Holding (EPH) and its financial partner PPF Investments (GBR, 2019, p. 30). In 2018, 22.5% of the energy used in Germany was generated from coal. After renewable energies, coal is the second most powerful energy source in Germany. In 2019, the Lusatian mining area accounted for around 40% of total German lignite production (Staatskanzlei & Lausitz-Beauftragter des Ministerpräsidenten, 2020, 8). In Lusatia alone there are 3,000 million tons of economically profitable coal reserves. The plan is to extract 1,150 million tons in the future (GBR, 2019, 30 cc).As a well-paying company in the region, every employee who works at LEAG is considered as “covered” in the future. Even though the end of coal is decided, “21 former apprentices from Lausitz Energie Bergbau AG and Lausitz Energie Kraftwerke AG (LEAG) successfully completed their final exams and are now starting their careers as skilled workers” (Weißwasser24, 2020).

The employees of LEAG, who joined the coal phase out in 2038 have passed the age of 58 years will be eligible. LEAG is also the owner of several future locations where the employees will continue to be employed in the future. Joint planning of all those involved is intended to prevent mass layoffs in the next few years. With BigBattery Lusatia LEAG provides a new system for energy storage with a usable capacity of 53 megawatt hours. The technology of the future is being developed at the current coal mining location in Schwarze Pumpe. Lithium Ions Batteries can save and release energy while renewable energy sources won't be able to meet the demand. The idea is to restructure places currently used as coal operated power plants in Saxony and Brandenburg (LEAG, 2019)

#### 4. Mental landscape research

The mental landscapes shown the variety of ideas and future visions in Lusatia. In November and December 2020, thirty stakeholders in Lusatia were interviewed about the positive sides that needs to be strengthen and the barriers to dissolve for the Lusatian transformation process. We talked about the opportunities and realistic future visions in accordance with their awareness and perceptions. At the beginning it quickly turned out that one structural weakness is the fleet of researchers and interviewers that comes to Lusatia and get answers. The actors in Lusatia are very open and welcoming but also tired of same conversations, which lead us to change the

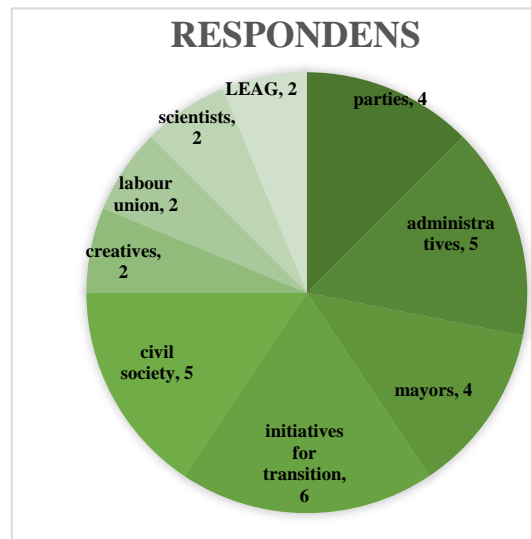


Figure 1 Discontinuation of surveyed stakeholders

interview guideline to a less strict chat about the opportunities and barriers of the stakeholders work and the possibilities for 2038. It was important for us to have a selection of different actors with diverse backgrounds to grasp the correspondence between the needs. In total we talked to thirty-two people in Lusatia.

After a short description of their work in relation to the coal phase-out and change they were asked about the strengths of the region. It was noticeable that nearly every third respondent started talking about the weaknesses first when it was asked about the strengths of the region.

It turned out that the barriers for the current situation in the just transition process can be filtered in 5

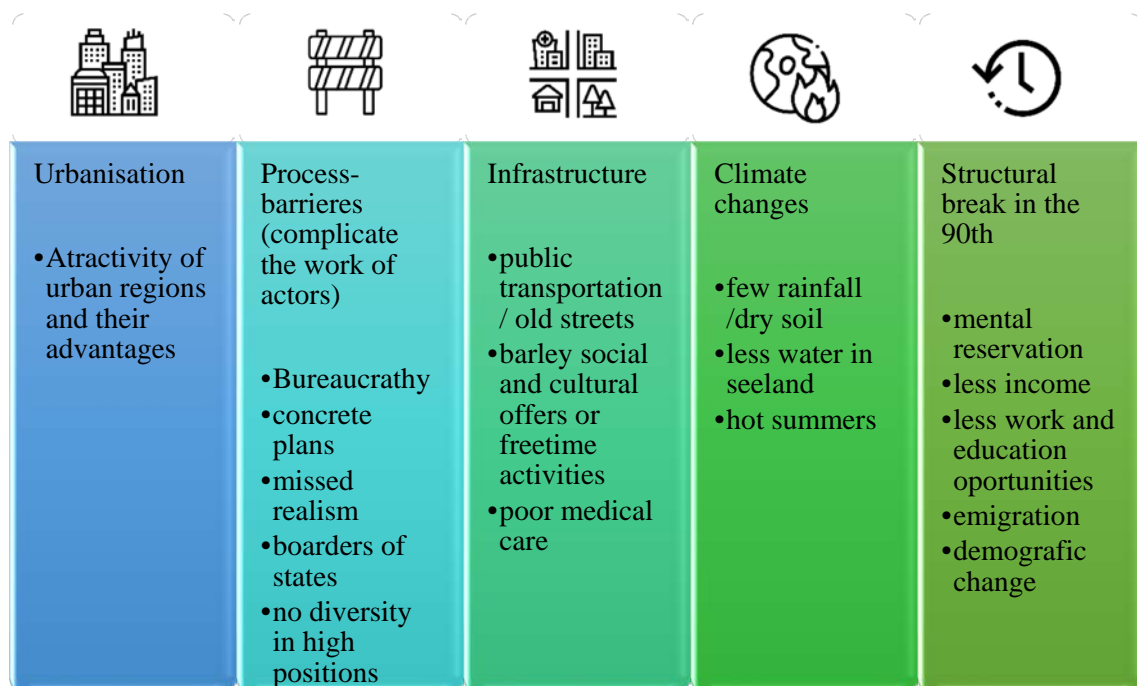


Figure 2 Barriers of the transformation process



categories which all influence each other. Lusatia lost many citizens during the 90<sup>th</sup> first transformation process which was dominated with a disaffection from east to west Germany. Still many people leave the region but rather for the city life in general. It's common to go to the cities around as Berlin, Dresden or Leipzig (Ellersiek, 2020). All the respondents mentioned the importance of overcoming the trauma of the 90's with political and personal refurbishment. Citizens older than 35 years lost their patience and tolerance for political decision. There is no strategy to bring the citizens back on board and to find trust and engagement due to a new participation program. The impact of the climate changes is perceptible in Lusatia. Weather changes and less rainfall felt farmers with poor harvest. Also, the tourism industry e.g. in Spreewald closed some watercourses for boat tourists because of the low water level (rbb, 2019; Rundschau, 2017; Trenkamp, 2004). The infrastructure is a big theme discussed in Lusatia. Many enterprises are planned and will be done until 2038. Streets should be modernized as well as the railways and public transportation. There is little number of doctors and bad medical care infrastructure in Lusatia which is a big problem for the growing old population and emergency cases. A medical education center in Cottbus is planned to improve the poor medical care in Lusatia. It is a unique enterprise in Germany for doctors who learn under different conditions than other universities in Germany offers. Since all projects take a lot of prework and bureaucracy, the tardiness of conversion for processes and projects was criticized by many actors in Lusatia. Two responders mentioned: *"Everything that needs to be done for a funding takes longer than the funding itself."*

Hence, in leading the process of structural change because of the coal phase out it was determined that the process was not well structured and incurred high funding costs. The papers written during participation workshops in the last year were expensive and is not as clear as the protagonists wished for. In November 2020, some texts were altered from the publisher *"which left the unpaid writers skeptical of the transparency and trust of the process, leadership of men over 50 years."* An interviewed scientist talked about how the receptive capacity of capital in Lusatia is based in the mutual understanding of communication and collaboration. *"We work together on lists of requirements and not on changing requirements (...) It's a question of mentality or culture. It is not about working together for a common future, but rather about asserting claims and formulating superior attitudes."* In fact, Lusatia's stakeholders need a new understanding of collaboration and mutual progress working on it.

As already showed, many named barriers or recognized and projects are planned or in progress. The benefit for Lusatia is that a big amount of funding helps to plan and structure the advantages for the future. The structure strengthening law from 2020 ensured approximately 955.000.000 Euro each year for the development of Lusatia.



*Figure 3 Opportunities for successful transformation process*

The mentioned strengths for Lusatia are categorized in culture, location, landscape, and tourism such as the mentality and strength of the people living in the region. The diversity of cultural benefits is open and not fathomed which leads a lot of space for industrial culture. The Sorbs with all their tradition and famous events are very highly respected in Lusatia and protected by the umbrella organization of minorities. The last years showed very engaged people who built up new centers for socio culture in different towns of Lusatia such as Görlitz, Hoyerswerda and Weißwasser. Rents of payments for houses and areas are extremely low. One highly esteemed factor in Lusatia is the great location in the heart of Europa with lakes and beaches such as hiking trails and tradition for tourists and free time activities. Lusatia became a tourist magnet in the last few years. The short routes to the cities Berlin, Prague, or Wroclaw. The region shows a new openness to new innovations, alternative work models as the energy region.

Lusatia's citizen are described as used to transformations, engaged and optimistic. The "(Lausitzmonitor, n.d..)" a census made in 2020 showed that 69% of the respondents support a high demanded structural change for Lusatia.

The respondents were also asked about their awareness in the region. Most of the asked actors are very satisfied with their quote and feedback. Some highly asked for further impact of states law and how they can help to implement ideas. There is a high need of better medial reports, which *"always showed the bad sides. We're not a Nazi- region, we are open, tolerant and welcoming!"* Other respondents talked about the low diversity of the process of transformation.

Women, teenagers, young people and migrated people are needed for a future vision. It is hard-to-find new people who are willing to spend their free time on stagnating process with the same people on board as always. *“Sometimes you feel, nothing changed, you stayed in the blade of your people!”*. Another comment was that the focus is in the core area of coal mining – the north of Saxony and the south of Brandenburg. This “core area” is about 30 to 50 km around the coal mining areas and ends at the borders to Poland. Everything around this place is not integrated enough in the process – to strengthen a whole region, it needs to be supported further and permanently.

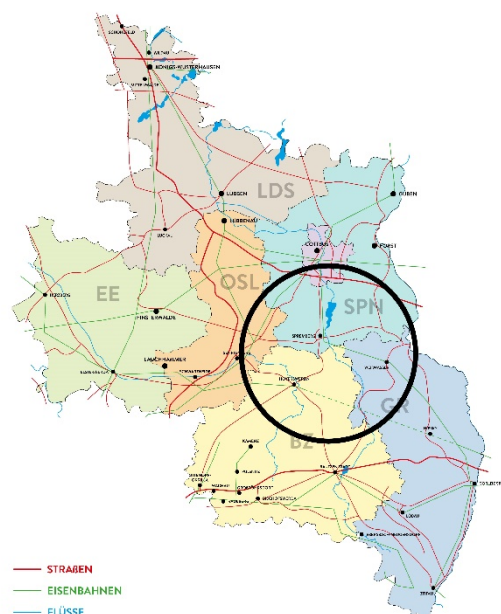


Figure 4 Core area of coal mining

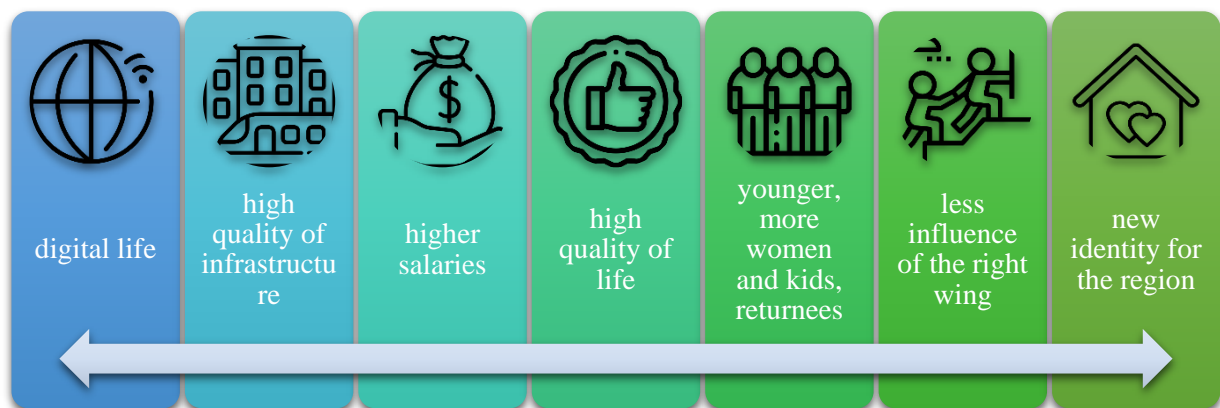
One Interviewee answered to the question if they feel their voice is heard, that: *“The whole world was in this office!”*. This shows the interest of internationality of this transformation process we can find in Lusatia. In 30 Interviews there were few stakeholders that often, very often named every time. They are the leaders of the just transition movement.

supraregional connections	<ul style="list-style-type: none"> <li>•solidarity welds together</li> <li>• common events</li> </ul>
media reports	<ul style="list-style-type: none"> <li>•representation of the region as unprogressive and appended</li> <li>•Attribution as right embossed region</li> </ul>
lusatian blade	<ul style="list-style-type: none"> <li>•workspaces with the same people</li> <li>•less multidimensionality</li> </ul>
policy	<ul style="list-style-type: none"> <li>•wrong expectations</li> <li>•less possibilities than advertides</li> </ul>
location	<ul style="list-style-type: none"> <li>•small core area</li> <li>•marginal areas except Berlin hardly considered</li> </ul>
diversity	<ul style="list-style-type: none"> <li>•leading actors in the region are male and over 50 years old</li> </ul>
continuity	<ul style="list-style-type: none"> <li>•participation of all stakeholders during the whole process</li> <li>•see themselves as guardians of implementation</li> </ul>

Figure 5 Different types of visibility

The last question was about the future vision. *What would we have in Lusatia by 2038?* After some interviews we added the question of the realism of future ideas or if the project or idea is just a dream that wishes come true. The asked people to define 7 categories for a better life in the region. The most named fact was the quality of life must be improved. A high-quality standard of life is selected by the

federal ministry of economic affairs and energy as solid economic development by means of environmentally friendly economic growth (BMWi, 2020). To reach that goal, the region needs comprehensive skilled personal, migration and trainees such as consensus about the future ideas and founding. For new work models and a new web based future Lusatia needs good quality and extension of internet connection such as glass fibre and mobile networks. The expansion of the infrastructure is already in full swing. New road construction measures and train connections have been confirmed.



*Figure 6 The seven chapter of 2038*

Nationwide collective wages and better working conditions are required. Even 30 years after the turnaround, wages in eastern Germany are not comparable with those in western Germany. An upswing is visible in exemplary industries, but fair wage policy must also affect employees who are exposed to below-average pay. An important step is the legislation on the minimum wage of 9.35 euros per hour. By June 1, 2022, the hourly wage will be increased in four steps to EUR 10.45. (BMAS, 2020). Many of the respondents regret the bad PR press in recent years. Lusatia has a big problem with right-wing extremists, which makes moving in or out of the country questionable for many citizens. It is extremely important to strengthen the region and to reduce the right-wing national tendencies through information and education. That means more influx, more good press about the achievements of the region and a new image. Lusatia seems lost and lagging in the new times. The respondents describe the truth in the development of the region and hope that this will be visible in the year 2038.

Tourism	Industry	University and research	Strengthening of citizen participation	culture and creativity and Start-up project	Attractivity	Modell Region
<ul style="list-style-type: none"> <li>• lakeland</li> <li>• relaxing and vacation</li> <li>• hiking in the highland</li> </ul>	<ul style="list-style-type: none"> <li>• BASF</li> <li>• BER Airport</li> <li>• Tesla</li> <li>• DB -Railway repair factory</li> <li>• civil protection center Welzow</li> <li>• industry park in Schwarze Pumpe</li> <li>• power storage</li> <li>• hydrogen</li> <li>• recycling</li> <li>• floating photovoltaic</li> <li>• glasshouses</li> </ul>	<ul style="list-style-type: none"> <li>• Fraunhofer Institute</li> <li>• Doctors Education</li> <li>• cooperation with University of Freiburg in Weißwasser</li> <li>• Zuse-Campus in Hoyerswerda</li> </ul>	<ul style="list-style-type: none"> <li>• processing of the 90th</li> <li>• support participation and civil engagement</li> <li>• alternative ways of working</li> <li>• generation change</li> <li>• high quality of life</li> </ul>	<ul style="list-style-type: none"> <li>• diversity</li> <li>• easy way of founding</li> <li>• less bureaucracy</li> <li>• faster permits</li> <li>• realism</li> <li>• sorbs</li> <li>• SME</li> </ul>	<ul style="list-style-type: none"> <li>• new image</li> <li>• family friendly</li> <li>• attractive for returnees and new settlements</li> <li>• open-mindedness and tolerance</li> <li>• digitalisation</li> <li>• security of skilled workers</li> <li>• equality</li> <li>• smart cities</li> <li>• infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• world exhibition</li> <li>• pioneer for other regions</li> </ul>

*Figure 7 Implementations*

To achieve these goals, all respondents reported on the tasks they had already completed or had agreed to do until 2038, which will advance the region. This includes numerous tourists offers, including the design of the flooding of open-cast mines and the resulting recreational landscapes. The unique landscape of the Zittau Mountains brings the diversity of leisure activities to light. The already existing branches of industry are also preparing for the exit from coal. In cooperation with cities and municipalities, sustainable paths are implemented by production facilities in Lusatia. There is great hope here at the railway maintenance facility in Cottbus. The universities and colleges work together on new technologies and future issues, research on topics such as hydrogen or recultivation. An indispensable task is to take the citizens with you. You have to be informed and have the opportunity to contribute yourself and your ideas. Some contact points have already been created for this. However, improvement is required here because the number of low thresholds offers is very low. For the Lusatian people it is important to come to terms with the injustices of the 90s. To try out new working models and to get along better within the generations. University medical training in Cottbus should not only provide the opportunity for higher training positions in Germany, but also make it attractive for later doctors to settle in the region and to remedy the shortage of doctors. Many unions and associations support the resident companies with their competence to be able to continue to shape the structural change. However, this requires more diversity, e.g., women and younger actors. Bureaucratic hurdles hamper the processes and demand large amounts of liquidity. Simple application channels and fundraising make this easier. An important focus is on the preservation and dissemination of the Sorbian culture and the support of small and medium-sized companies. In order to increase the attractiveness of the region for tourists and newcomers, many are involved in returnees' projects and natural reserves. The region advertises family-friendly offers such as free day-care and school places, growing up in the country and a lot of freedom, security and the feeling of home as well as the connection to parents and grandparents. This should make it easier to move back and forth and thus also bring new ideas and projects to the region. The vacancy and low rents or land prices make it easy for tired city dwellers to realize their goals. Many see the region as a model for other places that are about to phase out coal. If this process is successfully completed, one respondent said that one can think bigger and open a world exhibition on transformation events.

Summarized, the mental landscape of active stakeholders in Lusatia agreed about the current situation, the ideas and implementations and future visions. The creators in Lusatia are optimistic. They have visions to follow and cooperation to use. They have a loud voice who want to push forward. They want to be heard and give their voices to the various researchers and journalists. the respondents recently had the opportunity to express what is important to them. The priority here was the urgency of the implementation. The bureaucratic paths take too long. Furthermore, the whole of Germany should not cling to the successes of an automotive industry over the past centuries. New ideas and research are needed, otherwise Germany will be overtaken. Another important task is to give the actors a voice and

to make this publicly visible. The current situation would be glossed over. Some actors who fight for a social structural change, diversity and hope are writing the “Strategy of development”. It should have been published by the end of the year 2020. As the creators during a transformation process the possibilities of the region lay in their hands. Shortly before publication, this work was rewritten by the initiators. This has pushed back the confidence of many of the volunteers, who worked in their free time for the project. There are many questions. Who is making this structural change? Does it make sense to get involved? Can I also express criticism without being excluded from the process? As written earlier, Lusatia is bigger than 11.000km<sup>2</sup>. There are various stakeholders of different interest working on the future visions for Lusatia. Mostly projects are in one place and not beyond regional borders. For many, the process would be easier if people within a circle concentrate on change, pool their strengths and work on site. That would also rather convince citizens to work on projects, since action is made tangible. However, many also see the danger that the process should be controlled by younger people. The designation as a model region also triggers major discussions. The region is currently not able to act as a model. This requires better implementation.

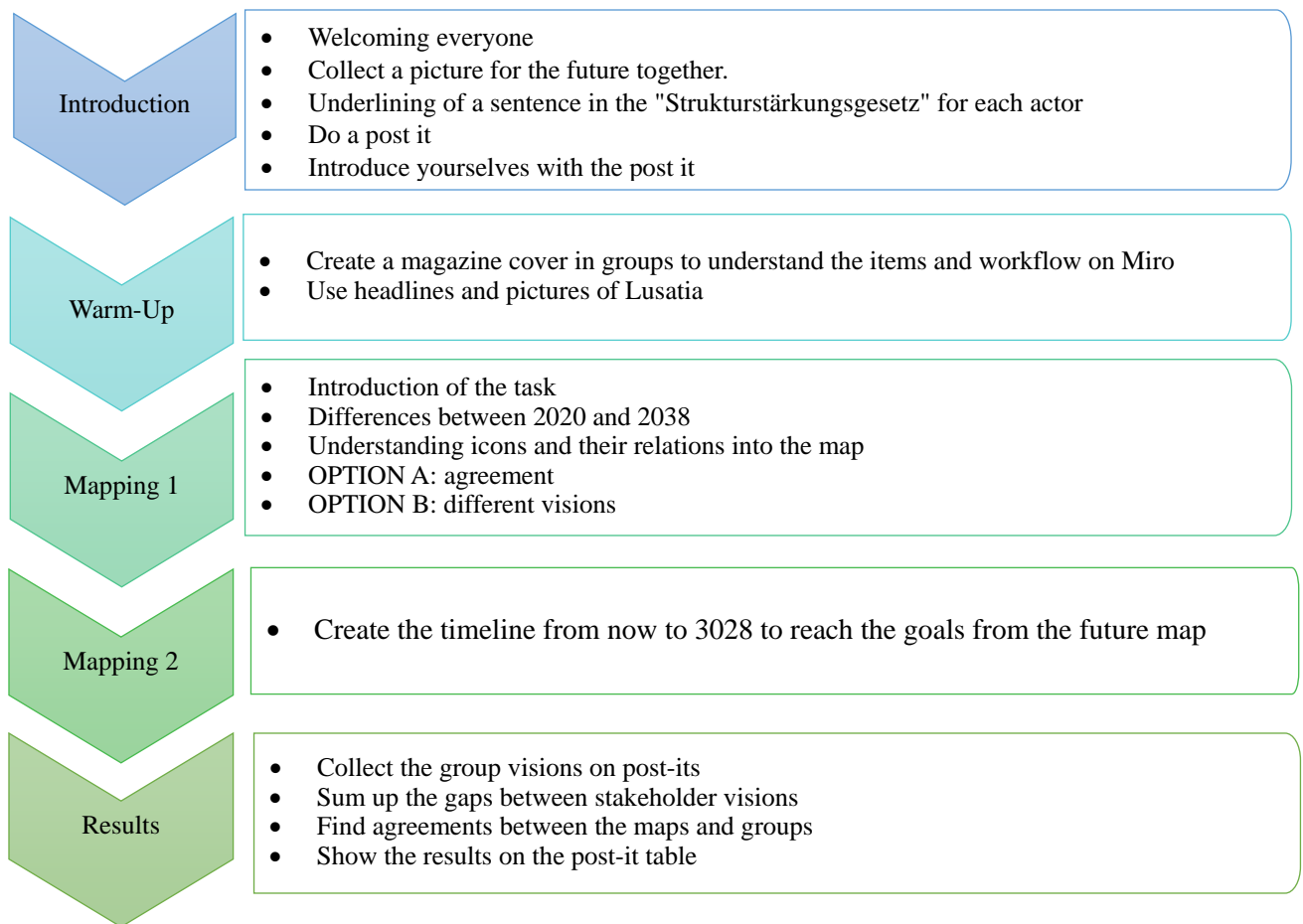
The structural change among ordinary citizens is a disaster for the region. So, the discussions stay diverse. People are afraid of the current problems and the future, that aims to be worse. They are afraid of losing their jobs again and feeling pushed back. In forums on social media citizens from Lusatia talk a lot about their fears and prognose the future in black. They think about the structural breakage, the fear, loss of meaning, the political majority will, the election forecast. The mindset is mostly tired, sad and without any strength for fighting.

Right-wing politicians see neither the need for an exit from coal nor the opportunities in transformation. Scientific knowledge is denied, and everyone's actions are called into question. Many voters who feel encouraged in these statements are difficult to reach to collaborate on future-oriented projects. More clarification and transparency are required from all sides.

## **5. Simulation Workshop**

A workshop was designed in cooperation with CRS to collectively record the current tasks in Lusatia. Due to the increasing numbers of new infections with the COVID -19 virus, the workshop was held online. For this purpose, Miro served as a work platform and ZOOM as a communication tool.

The aim was a strategic online simulation to jointly name the goals in relation to the structural change and to define responsibilities. During this, we wanted to talk about the individual steps that are needed to achieve a high-quality region in 2038. The following chart shows the schedule of the workshop.



*Figure 8 Simulation Schedule*

The simulation workshop in Lusatia was on the 10<sup>th</sup> of December 2020. The workshop was held in German. The native language enabled a freer expression and understanding of participants. 80% of those questioned stated during the interview that they wanted to take part in the workshop, that would have been around 25 people. Due to the Christmas season and the number of projects in Lusatia, we were only able to convince 10 participants to take part in the workshop after direct acquisition. Additional actors could be won for the workshop because the time was reduced from 4 to 2 hours. This meant that there was no time for working deeply in the online tool or for extensive explanations. Since the previous workshops recorded what could possibly cause problems, a video was cut to explain the tools to the participants in advance.

The moderator from the University of Graz welcomed everyone and introduced the team of the REBOOST Project. The Introduction was a short presentation about the Project itself and the aims for the duration until 2022. The task for the participants started with the registration in "miro". At the beginning there had been some issues with the registration for the platform. One participant wasn't able to overcome this problem with personal help my telephone and decided to quit.

The short version of the workshop started of a short round of introductions from everyone present. Using a note and a sentence from the "Lausitzprogramm 2038; 2020)". All participants could introduce





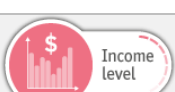
themselves one after the other. The four following post its show examples for the introduction of the participants and their motivation-sentences from the program for 2038.



Figure 9 self-identification with the strengthening law

During the second task the participants were asked to discuss a map of Lusatia with added cards about four different topics as energy mining, economy, environment, and society. There is also a topic for attributes to add a high or low influence of the cards. The topics itself had different types of cards to specify the locations changes. The cards can show different processes or indicators for these processes. Furthermore, the cards could also describe actual conditions.

Table 1 Symbols

Topic	Type	Effect (hazard; vulnerability; impact; resilience)	Card (Icon)
Society	Process	Impact*/Vulnerability*	
Society	Entity	Vulnerability	
Society	Indicator	Vulnerability*	

The actors involved were dissatisfied with the number and choice of cards. There is more that distinguishes Lusatia. So, there was only one card for industry. The actors said: *"We must also be able to see different branches of industry!"* For reasons of uniform clarity, it was a concern of the researchers as little as necessary and to insert as meaningful statements as possible by using less symbols. The actors were more in favour of completeness. A mayor spoke out in favour of his city that these few symbols on the map would also show how they are perceived from the outside. *"It is not the reality. There is a lot going on in his city in the region."*

After the participants completed this card, they were presented with an almost empty card from the year 2038, which they should now fill with the symbols. After 10 minutes the actors discussed their inserted symbols. They described general projects in the region. Everyone went into detail when it came to their own tasks and projects in relation to the place of work, residence, or place of assignment



The map shows that participants further set the pink symbols with society impacts. Economic symbols were also placed very often. Symbols for the energy mining and environment are little inserted into the map. The reason for this could be the less attention paid to the coal industry in 2038. Recultivation of the opencast mines is an integral part



Figure 11 Most important symbol for Lusatia

and task of the LEAG. The applications submitted in advance of coal mining must include the complete renaturation of the pits. The task is not with public supporters and therefore less attention. The words "higher income", "resettlement" and "research objects" stood out. The most important, however, was that "communication and raising awareness" for the process that is not explained enough in Lusatia. *"People complain that only new knowledge about the process is published, but that concrete actions are never implemented!"* For the same topic, the participants were the boarders. The cooperation between Poland, Germany and the Czech Republic is very poor and needs to be improved urgently. This requires funds from the EU and more initiative from the neighbouring communities. In addition, Saxony and Brandenburg must try to work together for Lusatia and not against each other, despite the different laws. *"This is not a competition; it is a jointly workspace!"*

Some did not add symbols to the map because it was not a suitable tool for defining the important tasks.

The last exercise was to find important key implementations during the process. The participants wrote post its and explained them. In a joint discussion, they described the ideas that must be implemented for a successful structural change during timesheets. The first period from 2020-2030 had the most outcome of tasks:

improving	strengthen understanding	strengthening actors and administration	strengthening workers	strengthening identity
<ul style="list-style-type: none"> <li>•adaptation of the funding guidelines for Saxony and Brandenburg</li> <li>•produce visible implementations faster</li> <li>•Establish a master plan</li> <li>•better infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>•explanation and participation of young people and civil society</li> <li>•make political processes more transparent</li> <li>•dealing with the first structural break</li> </ul>	<ul style="list-style-type: none"> <li>•ensure the ability of actors</li> <li>•better networking</li> <li>•administration training</li> <li>•create further training opportunities / retraining for those affected</li> </ul>	<ul style="list-style-type: none"> <li>•establish alternative branches of industry</li> <li>•Transitions of workers from the coal sector to new industries open up</li> </ul>	<ul style="list-style-type: none"> <li>•create positive identity</li> <li>•strengthen self-efficacy</li> </ul>

Figure 12 Implementations by 2030

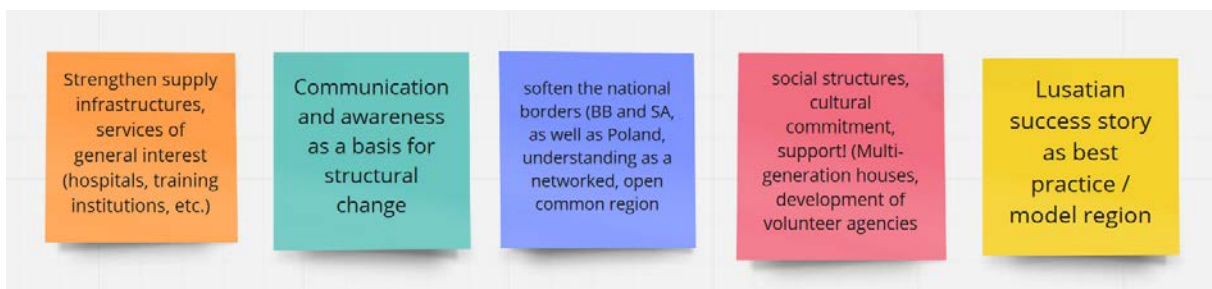
The important steps for the participants for 2038 are very similar to the implementations the respondents from the interviews told us. It turned out that the needs for now are relatively clear, while little can be

said about the needs and needs in 2030. The statements on tasks are therefore poor for this period. There are only four keypoints:

- implement the best practice model of Lusatia for other regions around the world
- fair demand for living space across Germany brings new people to the region
- accept new challenges and ideas
- staying in a dynamic process

Two participants also showed that there is no need of steps until 2038. They define it as a long-term mission to strengthen the citizen with confidence and prospects and lead them to collaboration and civil engagement. The improvement if communication between the population and politics is indispensable in this region. The further expand of digitization helps to eliminate network gaps, expand the broadband structure, implement 5G technology in mobility, research, and medical science. These will become permanent processes that accompany the transformation.

The summary of the workshop shows the urgency with which the participants repeatedly emphasize how important the tasks already mentioned are. The topics of participation and engagement found the largest attempt. There was also a need to raise awareness of the process and that this time it was a different, guided transformation than in the 90s. It also seems essential to include the neighboring regions. Poland, the Czech Republic, and Germany have the same problems and should also have the same goals. However, there is one thing that everyone agrees on in this workshop. Lusatia can present its success story as a best practice model.



*Figure 13 Conclusions*

To have the participants evaluate the workshop, a quantitative survey closed the online simulation. 12 questions should provide a summary of the structure and course of the workshop. The results should help to improve the work in future meetings. Due to the shortening of the workshop, the participants complained that there was not enough time to discuss the topics and plan joint implementations. They also criticized the technical implementation. Some elementary conditions were not or hardly met. So there were not only problems logging into Miro but also the design of the chat and video room at zoom. the participants would have liked concrete results. The workshop results are like those of other workshops and do not provide any concrete options for implementation. For this you have to delve deeper into the topic. The participants rated the entire workshop as a digital version, the tools used and

the moderation as very good. It is important to build on these positive findings and to make the results of such workshops more concrete.

## **6. Conclusions**

The coal phase-out in Germany has been decided. There will be no more coal-fired power plants to generate electricity by 2038. The three German coal regions are supported with 40 billions of founding. With the help of the federal government alone, more than 17 billion euros will flow to Lusatia. This means nearly one billion euros can be spent on structural aid per year. The two states of Brandenburg and Saxony have each drawn up funding guidelines. Actors outside the state governments strongly doubt the cooperation between the states. The representatives in the State Chancellery assure their meticulous cooperation. Above all, actors who value cooperation across national borders are sure, the divided states will cause major losses for future projects. The governments are asked to work with a high degree of transparency and community to implement as many projects as possible. Stronger cooperation is also missing with the Lusatian regions of the Czech Republic and Poland. Current guidelines allow little cooperation, as funds are only thought within the countries. Cross-border projects are rare and prevent working together on the same problem.

Although many stakeholders are very enthusiastic about the possibilities in Lusatia, but the application process for funding's worries them. In advance, there was talk of overarching funds for small and medium-sized companies, the self-employed worker, and initiatives. However, the current funds can only be applied for by the municipalities themselves. The aim is to prevent entrepreneurs outside of the structurally strengthening regions from feeling neglected. Actors complain about *"the guidelines have no uniform specifications, lack of parameters, benchmarks and unclear funding requirements. Too many decision makers are old and male. These men will not be able to support long term structures in future. Many administrative employees lack realistic implementations that are possible in the given time."* Stakeholders ask for clearly defined room for maneuver and simple applications without bureaucratic barriers. It is often said that tourism, which is created by flooded opencast mines and building a lake district, makes up for the commercial losses. Most of the players agree that even with excellent visitor numbers, an industry like that of coal cannot be balanced out. Especially not through just one branch of the economy. There is hope through the old towns on the Via Regia, that have pompous city centers. The largest man-made lake district in Europe is being built in Lusatia. The renaturation of the opencast mines brings new spaces to an unusually large number of rare animal and plant species. *"In addition to the preservation of living beings, the project is intended to serve as an impetus for the development of tourism in the Lusatian Lake District and through this to bring people closer to the beauty of nature"* (ngp Lausitzer Seenland, n.d.) Tourists appreciate visits to the Spreewald, the biosphere reserve and the Zittau Mountains. *"Where can I hike one day and go to the beach the next - here in Lusatia!"* one interviewee said. There are many ways to create sustainable offers for tourists. Above all, it needs workers and newcomers of working age. But the region has an image problem. It is considered outdated and right-wing populist. Again, and again, there are *"crooked"* press reports, headlines or documentaries

that confirm the extent of the urgency of an image change. One mayor describes the reports as *"stereotype and collective discrimination against groups"*.

But the region has been changing, for years, always. There are numerous projects and ideas for the future. Lusatia is the subject of research in different subjects. Many studies are initiated not only in for the lakeland or socio-economic and cultural terms. Researchers are working on the future technologies of hydrogen and electricity storage. The "Lausitzring" is test track for autonomous and networked driving (DEKRA, n.d.). Universities and schools are expanding their training opportunities. To counteract the high degree of lack of doctors, medical training and education should anchor the young doctors in the region. The infrastructure described as very bad is being expanded. A 200-kilometer ICE line from Berlin via Cottbus to Görlitz is being built for 1.6 billion euros. In addition, Deutsche Bahn wants to build a maintenance base in Cottbus for the basic overhaul of the new ICEs, costs about 400 million euros (rbb, 2020). Research and innovation attract people and the innovative strength. Students get involved creatively and generate new ideas. Culture and art events are no longer a rarity. Even if the base capital is low and the salaries are often many times less than in other regions of Germany, Lusatian citizen are fundamentally satisfied with their lives<sup>6</sup> (Lausitzmonitor; 2020). The rents are cheap and the possibilities for realization are high. Contacts and collaboration help make dreams come true. "Nothing is impossible here!" There is already a large pool of committed people that is trying to expand. Stakeholders complain about the great difficulties in reaching citizens and employees of civil society. The current turnaround makes dealing with the injustices of the 1990s inevitable. "If we create more clarity here, we can also reach several people." The future of Lusatia has already been determined once before. With a bad result. The fact that so many people lost their jobs and caused the escape to the West German regions is still very busy. People are afraid and have no trust in the upcoming processes. For many, this is also the reason why the region has such right-wing populist tendencies. Most stakeholders agree that this will change in the future. It is important to make people feel that they and their problems are being heard and that it is important that they are included. Change can only succeed with an entire society.

## **7. Similarities and Differences between the tree case studies**

In total, tree case studies are researched in the REBOOST project. In addition to the Lusatian district, the Konin region, greater Poland and the Gorj region in Romania are in focus. The differences between the regions are considerable. While the coal phase-out has long been decided and is being worked on in Germany, there are major difficulties in the other countries. Therefore the three regions are fighting a similar battle for fair coal politics and the involvement of citizens in the transformation process. Stakeholders describe a lack of social acceptance, given transparency and doubts about required tasks. Major common problems are the lack of trained staff, low-paid jobs, and the dependence of the coal

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<sup>6</sup> Overall, the satisfaction of the Lusatians with their personal life situation on a (school grade) scale from 1 to 6 averages 2.7. The majority of Lusatians (44 percent) are more or less satisfied with their lives (grade 1 or 2) (Lauitzmonitor; 2020)

industry. This shortage leads to the move, especially of young people, to study or to get an education in bigger cities. Only few of them come back to their homeland. There is a high number of people over the age of 50 and hardly any immigration. The responsibility of all groups to do justice to the weaker ones is a priority topic in discussions about fair processes. In the region of Groj, the administrative works tasks were described as a legislative and organisational mess. The lack of civil engagement and cooperation between administrative levels, as well as the huge dependency of coal is an enormous challenge for the European aims to prevent bigger causes due the climate change. The government in Poland does have a strategy for the local coal phase out. It contains the support of renewable energy in general as well as in enterprises and the public infrastructure. The greater Poland region (Wielkopolska) is a diversified region that offers a mature multisectoral economy, dynamically established SME's, top tier services and an advantageous economic location (KPMG, 2009). By now there is no clear explanation, how an application is made in order to receive money. There is no transparency where and how this founding's were distributed and where it has already ended up. Many stakeholders got tired fighting for the just transition without any support. This is a big difference to the German region in Lusatia where already a lot had been done to reduce carbon emissions and strengthening the regions in Saxony and Brandenburg. Huge investigations support the implementations of renewable energy research and improve the quality of life in urban regions. The process needs more diversity of leadership and a clear funding policy. The Lusatian's fear an inadequate power supply and the loss of jobs, as well as the interrupted value chains. Advisors are currently available to discuss and clarify unresolved issues. They are also responsible for the application process. An Implementation of advisors could be a possibility for other countries as well. An efficient start of transition strategies is to implement a mutual understanding of the necessity and urgency of the coal phase-out.

The tourist potential is a great hope for all regions. Ecological tourism can be an opportunity for local companies, but also the cultural identities of the regions. The aim is to greatly reduce dependency on subsidies.

The differences but above all the similarity among the challenges can be the great opportunity in the collaboration with each other. Cross-border projects should be brought into focus and actively promoted for the coal phase-out processes. The possibilities that could arise from common discourses and models are priceless.

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