

JAGIELLONIAN UNIVERSITY IN KRAKOW
CENTRE FOR EUROPEAN STUDIES

Domestic drivers and barriers in environmental
policy. The implementation of the Directive
2008/50/EC on ambient air quality and cleaner air
for Europe in Poland.

ELEONORA FAZI
1237362 / 1172453

Masters' thesis written under the supervision of
Prof. dr. hab. Ekaterina Domorenok
Department of Political Science, Law, and International Studies,
University of Padua

Dr. hab. Magdalena Góra
Institute of European Studies, Jagiellonian University

2021
Padova, Italy
Kraków, Poland

PLVS RATIO  QVAM VIS

Accepted by JUK supervisor
dr hab. M. Góra

Magdalena Góra

Domestic drivers and barriers in environmental policy. The implementation of the Directive 2008/50/EC on ambient air quality and cleaner air for Europe in Poland

Abstract

This thesis aims to investigate the implementation of the Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe in Poland, identifying the reasons why Poland has encountered non-compliance problems and also identifying relevant internal barriers and drivers for policy change. The case-study analysis reconstructs how the Directive 2008/50/EC has been implemented to date and the consequences for Poland's positions on new EU environmental policies. Poland has wrongly transposed three articles of the Directive 2008/50/EC into its national law, as it stated the opinion expressed by the European Court of Justice (ECJ) after the European Commission launched an infringement procedure for violations of the obligations contained in the Directive 2008/50/EC. The methodology adopted includes a mix of qualitative analysis, literature review, case-law approach, and historical analysis. The theoretical approach of Europeanization aims to consider the main aspects of multi-level governance and public policy studies. The historical reconstruction of the Polish background allowed tracing the inherent characteristics inherited from the past. Studies on enlargement provide insights into the Europeanisation of CEE countries, their pre-enlargement background, and European legislation adoption. The literature emphasizes primarily the fit/misfit that Poland had at the time of enlargement, considering the economic and social legacy of communism, reliance on coal, and the *acquis communautaire* to comply. The analysis presents three groups of stakeholders: main political actors, actors in the energy sector, and local and public actors. Their classification is based on the identification of the level of power they hold to influence policies. Furthermore, the actors with the most power will be the ones who can impose their preferences on those of other actors and thus realize their policy preferences.

Contents

List of abbreviations	4
1. Introduction	5
2. Air quality in Poland. An overview	15
2.1 Understanding “coal-land”: Poland’s reliance on coal	17
2.2 Directive 2008/50/EC on ambient air quality and cleaner air for Europe	18
2.3 Poland’s transposition of Directive 2008/50/EC and legal actions for clean air	21
3. Historical legacy revisited	28
3.1 Historical background and soviet union legacy	28
3.2 EU access and EU’s influence on environmental policies	32
3.3 Impact of enlargement on EU environmental policies	34
4. A Europeanization framework for understanding EU environmental policy implementation in Poland	36
4.1 EU enlargement and goodness of fit	38
4.2 Adaptation pressure for change	41
4.3 Implementing EU environmental legislation and goal attainment ..	43
4.4 Measuring non-compliance and EU legal actions	45
4.5 Explaining policy change	47
4.6 Methods	49
5. Domestic drivers and barriers for policy change	50
5.1 The EU factor as a driver	51
5.2 Domestic factors stabilizing the status quo	53
5.3 Stakeholders preferences and interplay: the power to influence policy change	61
6. Conclusions	68
6.1 Future desirable policies	72
6.2 Example of good practice	75
7. Bibliography	76

List of abbreviations

APP: Air Protection Program

CEE: Central and Eastern Europe

COP: Conference of Parties

ECJ: European Court of Justice

EEA: European Environment Agency

EIR: Environmental Implementation Review

EU: European Union

GHG: Greenhouse gas

MS: Member State

NGO: Non-governmental Organization

TFEU: Treaty on the Functioning of the European Union

UN: United Nations

UNFCCC: United Nations Framework Convention on Climate Change

WHO: World Health Organization

Directive 2008/50/EC: Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe

CO₂: Carbon dioxide

PM: Particulate matter (PM_{2.5}: fine particulate matter)

NO₂: Nitrogen dioxide

O₃: Ozone

SO₂: Sulfur dioxide

1. Introduction

The European Union recognizes climate action as one of the top priorities for early action. The strategy adopted includes a package of measures contained in the European Green Deal, including environmental conservation, extensive investment in innovation and research, and the further reduction of greenhouse gas emissions. The air quality challenges of the European Union are ambitious and involve all Member States and their citizens. The proposed strategy is mainly based on introducing pollutant emission standards at the national level and on monitoring emissions from the primary pollutant sources. The main aim is to improve the quality of the air that European citizens breathe. The EU has been working for decades on reducing the negative impacts of air quality on human health and the environment. The most remarkable progress has been made in the European level's energy, fuel, and transport sectors. As an EU Member State, Poland still experiences poor air quality that causes severe problems to human health and the environment. Its efforts to improve air quality have increased over the years, and much progress has been made in pollutant emissions. Thanks to the European Green Deal, the EU's 2050 climate neutrality goal will become European law. At the international level, the EU plays the leading role in international climate negotiations and pushes for the largest emitting countries to raise their emission commitments. The United Nations Framework Convention on Climate Change (UNFCCC) has underlined a widespread consensus that a coordinated global response to the threat of climate change is required. Evidence that the world is warming and that human activity is primarily to blame have continued to accumulate in recent years. Under the UN Climate Change Conference, which took place in Glasgow in October and November 2021, also known as COP26, the agreement was reached by accepting India's request to replace the term "phase out" of coal for energy production with the term "phase down". Also, at India's request, the provision of funding to support the energy transition was added. The signatory countries to the Paris Agreement (i.e., all of the nearly 200 countries of the world) are committed to keeping global warming below 1.5 degrees from pre-industrial levels. A step forward from the Paris Agreement's primary target of 2 degrees. The final document sets the minimum goal of decarbonization of countries to 2030: a 45 percent cut in CO₂ emissions compared to 2010. It then plans to reach net-zero emissions around mid-century. The

document asks states to update their decarbonization commitments by 2022. The international agreement on climate change poses policy challenges for Poland. Poland has been an active member in international negotiations on climate change, particularly as a signatory to the Kyoto Protocol, and host to the 14th Conference of Parties of the UNFCCC in December 2008. Poland exceeded its Kyoto targets, and the country kept outperforming its Kyoto commitments by a considerable margin.

Nevertheless, the most demanding commitments on air pollution for Poland come from the European Union (EU) policies on climate change mitigation. The EU has taken a proactive attitude within the international community's ongoing negotiations by establishing the objective of at least 55 percent greenhouse gas (GHG) emissions by 2030 (European Council, 2020).

Therefore, as an EU Member State, Poland has specific duties to accomplish to face climate change. European air quality regulations have the twofold objective of improving environmental conditions and quality of life. These purposes demand effective and early action by the Government of Poland to control emissions growth (World Bank 2011). Poland faces a critical challenge in CO₂ reduction because of its heavy dependence on abundant domestic coal. While European environmental policies contribute to preventing and combating global warming and climate change, they also aim at more comprehensive objectives of protecting human health and promoting the broader adoption of clean and renewable energy.

Air pollution represents a global threat to ecosystems and human well-being as it is currently the most important environmental risk to human health (European Commission, 2017). In many European cities, citizens live in areas where air pollution is a substantial hazard for their health and can reach high critical levels. The World Health Organization (WHO) associates air pollution exposure to diabetes, obesity, systemic inflammation, Alzheimer's disease, and dementia. People exposed to air pollution can undergo multiple disorders (e.g., cardiovascular diseases and weakened lung function, respiratory plagues, and asthma). Some people are further at risk for health damage caused by air pollution because they live in geographical locations that make them more at risk or because some people are more susceptible to environmental hazards. Europe's most damaging pollutants are particulate matter (PM), nitrogen dioxide (NO₂), and ground-level ozone (O₃). The European Environment Agency (EEA) finds that fine particulate matter (PM_{2.5}) has the

most significant impact on health regarding disease and early death. The International Agency for Research on Cancer rates PM_{2.5} as one of the significant reasons for cancer. Long-term exposure to PM_{2.5} causes cardiovascular and respiratory disorders. The WHO and the EU have introduced the health standard for long-term exposure to PM_{2.5}. WHO set the limit value at ten micrograms per cubic meter of air (10 µg/m³), while the European Union has placed an annual limit value of 25 µg/m³. The European Union's ultimate purpose is to diminish early deaths linked with exposure to PM_{2.5} and O₃ by 55 percent by 2030. In 2021, the EEA listed cities from cleanest to most polluted based on average levels of PM_{2.5}. The EEA considers long-term air quality poor when PM_{2.5} levels are at or above the annual limit value of 25 µg/m³. Of the 323 cities classified by the EEA, 127 have air quality rated as good. From 2019 to 2020, Nowy Sącz (Poland), Cremona (Italy), and Slavonski Brod (Croatia) were the three most polluted European cities.

Growing awareness of the repercussions and risks of air pollution has led to calls for action and mobilization. As a result, public interest increased the demand for measures to enhance air quality and a growing public and media commitment to take a step against air pollution. Around public support, there is rising media and political interest in issues related not only to air quality and ecosystem prosperity but, most notably, to human health. Therefore, the EU has launched numerous campaigns to sensitize citizens to change their consumption preferences and most damaging habits. More and more frequently, groups of private citizens, associations, or non-governmental organizations (NGOs) are launching lawsuits against local or national authorities that do not adopt reasonable efforts to improve air quality. Governments of European Union Member States thus find themselves having to respond both at a supranational level, such as the EU, and at the level of public opinion, which is increasingly intolerant of the "clean air" issue. Thus, the EU urges the Member States to adopt adequate and incisive measures against air pollution. The EU is working to combat air pollution by establishing ambitious air quality objectives. The EU based the clean air strategy on three main pillars (European Commission, 2018): (1) the Ambient Air Quality Directives (EU, 2004, 2008), which set out air quality standards and demand the Member States to evaluate air quality and to execute air quality programs to improve or maintain the quality of air; (2) the National Emission reduction Commitments (NEC) Directive (EU, 2016), which sets national

emission reduction commitments; and (3) specific legislation establishing actual emission and energy efficiency criteria for crucial causes of air pollution (European Environment Agency, 2020).

In 2019, the European Commission published a fitness check of the EU Ambient Air Quality Directives (EU, 2004, 2008) to investigate the effectiveness of the requirements held by the Directives. In particular, the European Commission analyzed compliance with air quality criteria, the plans employed by the Member States to monitor air quality, and the measures adopted to inform the public. The ultimate goal was to evaluate how the provisions implemented favored action to block or decrease adverse impacts. According to the evaluation of the European Commission, the implementation of the Ambient Air Quality Directives package has not been fully effective. The identified weakness arises from the fact that the achievement of fixed goals is partial. It also derives from a considerable gap between the criteria required by the Directives and the difficulty of some Member States in achieving them. As a result, although the measures in the Directives are fit for purpose, air quality programs and measures can be made more effective and efficient. (European Commission, 2019). Therefore, not all Member States have adequately implemented the terms set at the European level. The European Commission has also launched infringement procedures against several Member States for infringing air quality standards. According to the EU treaties, the European Commission may take legal action – an infringement procedure – against an EU country that fails to implement EU law. The European Commission may also refer to the European Court of Justice (ECJ) when an infringement procedure occurs. (European Commission, 2019).

Directive 2008/50/EC set air quality goals, including ambitious purposes for protecting human health and environmental quality. It also specifies methods to evaluate these goals and take corrective procedures if the Member States do not reach the demanded standards. It provides for the public to be kept informed. (EUR-Lex, 2008). In 2018, the European Commission referred six EU countries – France, Germany, the United Kingdom, Hungary, Italy, and Romania – to the ECJ for failing to attend air quality limit values and for missing to adopt proper measures to maintain exceedance periods as brief as tolerable (European Commission, 2018). The infringement procedures launched by the European Commission regarded persistent breaches of air quality provisions, in particular PM10 and NO2.

- Regarding NO₂, thirteen infringement proceedings were pending in 2018: against Austria, Belgium, the Czech Republic, Germany, Denmark, France, Spain, Hungary, Italy, Luxembourg, Poland, Portugal, and the United Kingdom.

- There were sixteen infringement cases for PM₁₀: against Belgium, Bulgaria, Czech Republic, Germany, Greece, Spain, France, Hungary, Italy, Latvia, Portugal, Poland, Romania, Sweden, Slovakia, and Slovenia.

The Commission referred Poland to the ECJ for breaches of both NO₂ and PM₁₀ limit values. In Case C-336/16, the judgment of the Court (Third Chamber) of 22 February 2018 *European Commission vs. the Republic of Poland*, the ECJ, validated the Commission's position. Poland failed to comply with the limit values set out in Directive 2008/50/EC and had not adopted adequate and necessary measures to contain the PM₁₀ limit values. Moreover, Poland has wrongly transposed three articles of the Directive 2008/50/EC into its national law. (ECJ 2018)

According to the 2017 Environmental Implementation Review (EIR), addressing air pollution represents one of the principal challenges for Poland in implementing EU environmental policy and law (2017 EIR). However, according to the EIR 2019, Poland has reached no improvement on fixing air quality since the 2017 EIR (2019 EIR). The primary reasons for the bad air quality in Poland are the combustion of low-quality coal in domestic boilers and the transportation emissions produced by the growing road transport (2019 EIR). The matter is still problematic today principally due to two domestic factors: the use of coal, of which Poland is the biggest producer in Europe and still plays a significant role in the Polish energy system, and the use of old boilers in households with low energy efficiency and for a prolonged period due to Poland's temperate climate.

Man-made air pollution derives in large volumes from burning fossil fuels. The boilers present in homes, offices, and commercial activities produce toxic pollutants dangerous for the environment and human health. The pollutants generated by residential and commercial heating systems that contribute to the EU's breach of air quality standards include NO_x, volatile organic compounds, and particulate matter less than 2.5 microns in size (PM_{2.5}). Therefore, one of Poland's most significant environmental challenges is protecting air quality from pollutants coming from domestic heating systems.

Even though Poland is today a market economy, as a legacy from the-communist regime, the Polish national government has continuously supported the coal industry (Rentier et al., 2019). Poland's shift to a market economy since 1989 has a co-benefit of sharply reduced air pollutants emissions; however, the nexus linking growth and emissions has re-emerged in recent years (World Bank 2011). In 1990, almost 388,000 people worked in Polish coal mines (Szpor, 2017). During the 1990s, four different government plans led to several mine cessations, while they merged other mines into more giant coal companies (Baran et al., 2018; Suwala, 2010; Zientara, 2009).

The European Union is targeting the object of decarbonization by the middle of the current century. This aim is part of the ambitious European Green Deal, an EU package of measures a prime priority (Brauers and Oei, 2020). In elaborating the EU's climate agenda, some European leaders have assumed a careful position on climate. Poland and other CEE countries need to guarantee significant financial and administrative support to deepen their energy transition. The European Union requires Poland to foster substantial grants to design new economic drivers not based on coal mining and production (Elkind and Bednarz 2020).

The package of European environmental policies is among the most complex and extensive of any at the international level. It affects all Member States in order for them to benefit and demands compliance. The EU has become the main driver for environmental policy output for its Member States. Becoming a proper EU competence relatively late, environmental policy has been one of the policy fields where European integration has considerably developed during the last decades. The environmental *acquis* evolved quickly (Holzinger *et al.* 2006); the EU has become the primary reference of environmental policymaking in the Member States (Jordan and Adelle 2012; Delreux and Happaerts 2016). The EU exercises intense pressure on the Member States to reach the levels and criteria it sets. For some countries that already have a good level of environmental policy development, achieving EU levels is more feasible. On the other hand, for some countries whose environmental policies lag behind the required levels due to social, historical, and cultural reasons, reaching the levels imposed by the EU is more problematic and requires intense economic efforts. It is the case of Central and Eastern Europe (CEE) countries that joined the EU in 2004 and that, compared with the other Member States and the European average, are lagging in the

improvement of environmental policies. Simultaneously, EU environmental policy has undergone severe compliance difficulties. It is the policy field with the second-highest amount of infractions of EU law. The high level of non-compliance has frequently raised concerns about an increasing compliance dilemma in the EU (Collins and Earnshaw 1992; Jordan 1999; Haigh 2015). The EU's growth is not limited to the environmental *acquis*; Member States have also tripled. An increasing variety of EU environmental legislation to implement and a growing number of states to monitor should motivate to suppose further non-compliance. In 2004 the European Union experienced its most large enlargement to the East with ten countries accessing the EU. In terms of population and economic influence, Poland is the biggest country in the CEE region that joined the European Union in 2004.

Many scholars have investigated whether the eastern enlargement of 2004 has harmed the decision-making capability of the EU. It emerges that only in a few policy fields, such as climate change, the 'new' Member States gather together in resistance to a relatively cohesive group of the 'old' Member States. Enlargement has perhaps added an extra dimension of contestation in EU legislative decision-making in some policy areas like the environment, but the decision-making machinery has maintained a level of capability similar to the era preceding 2004. Therefore, the Eastern enlargement has not had a meaningful disadvantageous impact on the decision-making capacity of the EU. (Toshkov 2017).

Moreover, the Commission has produced a whole set of new instruments to increase the compliance capability of (new) Member States. Over time, EU environmental law has become profoundly diversified in policy areas, policy instruments, and governance strategies (Jordan *et al.*, 2013; Börzel and Buzogány 2019).

Today's relevance of environmental problems on the European and global scenario makes it inevitable that all national policies adapt their legislation to the EU environmental regulations.

The following sections present a case study of EU environmental policies focusing on air pollution and air quality and their implementation in Poland. The Directive 2008/50/EC under review highlights one of the most problematic aspects of European environmental policies: combating air pollution to protect the environment and human health. The European Union has set itself the objective of improving air quality through regulations

to reduce polluting emissions into the air at a national level and control the emission of toxic substances into the air from the principal polluting sources. (European Commission). The analysis of Directive 2008/50/EC highlights that many Member States have experienced significant difficulties in achieving the expected standards, curbing emissions, promoting fitting transposition of the Directive 2008/50/EC into national legislation, and implementing policies in line with the Directive 2008/50/EC. The case has been selected based on its particular salience because the European Commission has intervened against Poland for not complying with the provisions contained therein. The ECJ has ruled in case C-336/16 ACTION for failure to fulfill obligations under Article 258 TFEU, brought on 15 June 2016, European Commission v. Republic of Poland. The Court found in favor of the European Commission because Poland had exceeded the air quality limit values imposed by the Directive 2008/50/EC and had not taken the necessary measures to contain pollution.

The case raises the question of why Poland has failed to implement the Directive 2008/50/EC. This project aims to investigate which domestic factors and actors are responsible for the implementation failure of the Directive 2008/50/EC, which factors and actors are facilitating change at the domestic level, and why these factors have influenced the implementation of the Directive 2008/50/EC.

A framework suitable to include all these factors is the Europeanization theory, which conceptualizes the European Union's growing influence on the Member States. Although some European regulations are complex due to misfits between national and European legislation, the European Union has a domestic impact on the Member States. Environmental policies are representative examples where the external impact of the EU on national policies is most evident. The Europeanization theory also explains why the EU has played a crucial role in the institutional and political transformation of CEE countries. Among them, Poland represents a relevant case study due to its complexity.

The approach adopted will be to reconstruct the case in analysis from two directions. First, a historical trend will allow reconstructing the history of the case from the roots of the Polish background to the implementation of the Directive 2008/50/EC and the actors and factors responsible for its compliance; second, a top-down perspective will allow deepening what steps have been taken at the national level to implement the Directive

2008/50/EC through the mediating factors involved. The analysis will focus on national aspects that have played a role for or against the successful implementation and actors' power to influence policy change.

The descriptive analysis of the case study in the context of the EU eastern enlargement influencing the EU environmental policies introduces the Europeanization theory. This thesis combines the public policy study approach with country-specific variable thinking to deepen the non-compliance issue identified in the case study. It complements a historical approach to provide an explanation of the roots of the factors under research. The literature emphasizes primarily the fit/misfit that Poland had at the time of enlargement, considering the economic and social legacy of communism, reliance on coal, and the *acquis communautaire* to comply.

The main Research Question for the thesis is why Poland encountered non-compliance issues in implementing Directive 2008/50/EC. The research focuses on the relevant domestic barriers for policy change and which role socio-political and economic dimensions play in this. The study examines the stakeholders' preferences and their interplay to define what level of power they hold that could influence policy change and successful implementation of Directive 2008/50/EC.

To answer this question, the thesis analyzes which actors and their networks support policy change and which actors and interests might have already destabilized the ongoing discussion on air pollution mitigation. The thesis identifies drivers and barriers factors and actors in the domestic context, acknowledging the underlying politics and the technical, economic, and social context.

Broadly speaking, the research demonstrated that the analysis of public policies on air quality could not ignore a comprehensive study of the Polish energy regime and its dependence on coal. It became a necessary step to reconstruct its historical origins and economic, social, and political causes.

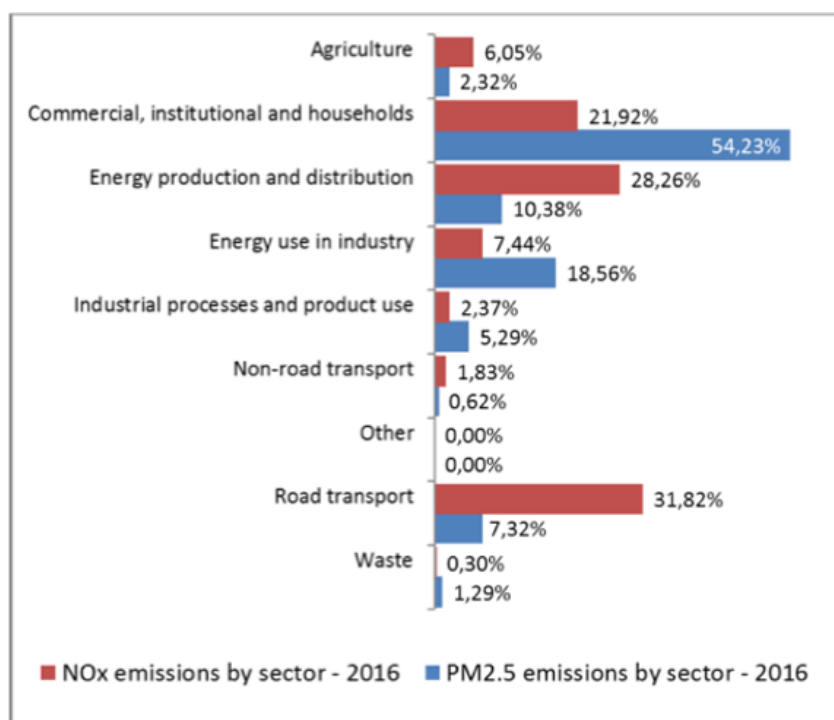
The theses proceed as follows. Section 2 introduces the Directive 2008/50/EC in analysis and the status-quo of the Polish energy system. Section 3 looks at the background through historical reconstruction of the soviet legacy and EU enlargement. Section 4 presents the theoretical framework and the methodology adopted. Section 5 describes the main

domestic factors influencing domestic policy change. Finally, section 6 concludes and offers suggestions for possible future changes.

In addition, it presents legal actions for clean air undertaken by Poland. As environmental policies are challenging for CEE countries at the European level, they tend to be followers – and sometimes perceived as 'laggards' – on climate issues.

2. Air quality in Poland. An overview

Air quality in Poland remains a reason for severe concern. The European Environment Agency estimated that in 2015 about 44500 premature deaths were attributable to fine particulate matter concentrations, 1300 of them to ozone concentration, and 1700 to concentrations of nitrogen dioxide (EEA, 2018). It emerges that Poland is one of the countries with the highest levels of air pollution in Europe. Data from the WHO reveals that of the 50 European cities with the highest pollution rates, 33 are Polish.



PM2.5 and NOx emissions by sector in Poland (*NECD data submitted by Member State to the EEA, 2016*)

In the EIR 2019, the European Commission registers no improvement on enhancing air quality since the 2017 EIR. In 2017, EU air quality criteria were breached in most air quality zones (46 zones in total) (EEA, EIONET): for particulate matter (PM10) in 34 zones, for fine particulate matter (PM2.5) in 19 zones, for nitrogen dioxide (NO2) in four zones and sulfur dioxide (SO2) in one air quality zone.

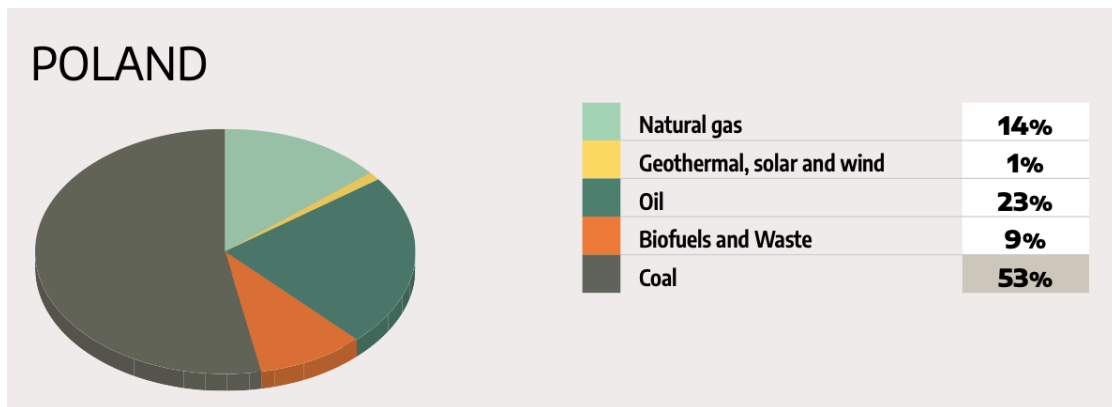
According to EIR 2019, Poland had no rise in air quality as the limit values of some toxic substances (such as PM10 and NO2) were over the allowed level. It emerges that the most

meaningful accusation against Poland was the exceeding of the limit values. The European Commission identifies domestic heating as the primary cause for this. Based on data from the National Agency for Energy Conservation (KAPE) and Central Statistical Office (GUS) analysis on the composition of heat consumption in Poland, individual households produce the most significant volume of heat. *Forum Energii* defines heat as "district heating networks with generation sources, and non-system heating, i.e., individual heating systems in households". Boilers in Polish houses are cheap, and the coal consumed in them is of lesser quality. According to the European Commission, combustion for domestic heating causes dangerous emissions that Poland should decrease, rejecting coal as the primary raw material preferring clean energies. The European Commission also advocates for introducing low-emission areas and tax incentives for households. (EIR 2019).

2.1. Understanding coal-land: Poland's reliance on coal

Although today coal is one of the bitter enemies of those who defend environmental protection, in the past, coal played a significant social and economic role not only for Poland but also for the construction of the European continent. After World War II, coal became an instrument of European unification. In 1952, France, the Federal Republic of Germany, Italy, and the three Benelux countries created the *European Coal and Steel Community* (ECSC). The Community provided massive assistance to these industries, which were able to improve and evolve further.

Today the accusations against coal convict it to its defeat, especially ecological. Air pollution in Poland is principally due to the abundant use of coal, which is the core of the energy system as Poland is the largest coal producer in Europe. The coal business is one of the driving strengths of the Polish economy: coal generates more than 70 percent of national energy, and heating produces 80 percent of Poland's electricity. Poland's and Europe's dependence on coal is an issue that curbs ambition on EU environmental policies.



Statistics on climate policies in the countries assessed (*Revolving Doors and the Fossil Fuel Industry*, 2018)

Large hard coal or lignite plants, such as those in *Belchatów*, *Kozienice*, or *Opole*, are accountable for most of Poland's power production.

Belchatów is the largest lignite power plant in Europe and one of the 25 largest power plants in the world, providing some 20 percent of electricity to the national system.

"*Kozienice*" is the largest hard coal plant, alone providing 8 percent of electricity.

Due to the large share of domestic coal, Poland is one of the least energy import-dependent EU Member States. Despite rising coal imports from Russia, in 2013, Poland imported 25.8 percent of energy supplies (the EU average is 53 percent). Moreover, coal exports to Germany enabled Poland to remain a net exporter.

Decarbonizing Poland would be beneficial for environmental safeguard and human health, but at the same time, it may lead to losing thousands of jobs that the Polish coal enterprise provides. Although the European Union intends to close all coal mining by 2050 permanently, Poland has limited willingness to curb the treatment of coal. While other European countries where coal represents one of the principal economic drivers (e.g., UK, Germany, Spain), Poland is not rejecting coal. What makes the Polish case interesting is that this does not seem to depend only on a delay in energy transition compared to other EU countries but suggests that Poland prefers to defend its coal industry. Opposition to decreasing coal production and consumption originates from various actors' preferences, namely, coal corporations, parts of civil society, and the government. Their opposition focuses on the possibility of incurring loss in their business, concerns of growing energy prices and energy security attention, and potential unemployment in areas almost wholly reliant on coal. (Brauers and Oei, 2020)

The European Commission is starting infringement procedures covering all EU countries concerned, including Poland, to follow up persistent breaches of air quality requirements (for PM10 and NO₂), which critically hurt human health and the ecosystem. Regarding exceeding PM10, the Commission has referred Poland to the ECJ, which has ruled on the matter in Case C-336/16, confirming the Commission's position. The purpose is to develop adequate measures for compliance and reduce the exceeded limit values.

2.2. Directive 2008/50/EC on ambient air quality and cleaner air for Europe

In 2016 the European Commission launched an infringement proceeding against Poland for failing to comply with the limit values set out in **Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe**. In 2018, the ECJ ruled in **Case C-336/16 ACTION for failure to fulfil obligations under Article 258 TFEU, brought on 15 June 2016, European Commission v. Republic of Poland**. The decision offers food for thought on the

implications of European environmental measures on health protection and economic and social needs. The European Commission had brought an action against Poland for failure to meet its commitments. It was possible thanks to Article 258 TFEU, according to which *"If the Commission considers that a Member State has failed to fulfil an obligation under the Treaties, it shall deliver a reasoned opinion on the matter after giving the State concerned the opportunity to submit its observations. If the State concerned does not comply with the opinion within the period laid down by the Commission, the latter may bring the matter before the Court of Justice of the European Union."* (Article 258 TFEU). With the decision of 22 February 2018, the ECJ confirms the European Commission's claim: Poland has exceeded the limit conditions for air quality set out in the Directive 2008/50/EC and failed to adopt the necessary measures to contain pollution. In particular, there are four elements that the European Commission invites the ECJ to check. According to the European Commission, Poland has infringed EU law in the following actions:

(i) Between 2007 and 2013, Poland would have exceeded the daily limit values for PM10 particles in precise air quality evaluation and management zones and agglomerations.

According to Article 4 of the judgment, *"Member States shall establish zones and agglomerations throughout their territory. Air quality assessment and air quality management shall be carried out in all zones and agglomerations."* In nine cases, there was an exceedance of annual limits.

In addition, Article 13 specifies that the standards for sulfur dioxide, PM10, lead, and carbon monoxide must not exceed the defined limit values. Moreover, Poland has failed to notify the Commission of any improvement in the requirements. On the side of Poland's defense, Poland declared that the European Commission had failed to present the essential proof of such exceedances. However, the Commission did provide data from Poland's annual air measurements.

(ii) Poland had not taken sufficient and necessary measures to contain the PM10 limit values.

Instead, Poland should have built strategies to guarantee that the exceedances would be of short duration and protect "sensitive population groups".

On the side of Poland's defense, Poland would have suffered difficulties in implementing this provision. In this regard, the ECJ pointed out that European environmental policies aim to protect the environment and human health. Indeed, the protection of public health is in a predominant position over environmental protection. According to the definitions included in Directive 2008/50/EC, '*pollutant*' shall mean any substance present in ambient air and likely to have harmful effects on human health and/or the environment as a whole (Article 2.2). Moreover, '*information threshold*' shall mean a level beyond which there is a risk to human health from brief exposure for particularly sensitive sections of the population and for which immediate and appropriate information is necessary (Article 2.11). It reflects that the case study under analysis includes non-negligible importance from the point of view of human health. This will also play a crucial role in the civil society response. Poland has not met its air protection responsibilities and did not enough to protect its population.

(iii) Poland had exceeded the limit values several times.

In many cases, Poland has exceeded the acceptable margins of tolerance. According to Article 22.3, "*the maximum margin of tolerance specified in Annex XI for each of the pollutants concerned*".

(iv) Poland has wrongly transposed three articles of Directive 2008/50/EC into its national legislation.

The articles concerned are Articles 13.1, 23.1.2, and 22.3. In particular, the Directive 2008/50/EC expressly designates the responsibility of the Member State to take actions to curb overtime the values that exceed the thresholds fixed for air quality. Although Poland answered that it had made plans for national air quality exceedance, according to the European Commission, the Polish national act lacks this duty and does not include adequate measures to limit the values in case of exceedances.

The ECJ, on its part, considers insufficient the measures taken by Poland to contain the exceeding of the air quality threshold values indicated in the European Directive 2008/50/EC. Consequently, Poland has not correctly transposed European law.

Directive 2008/50/EC emerged from the implementation of the thematic strategy on air protection, based on "*the sixth Community action program on the environment*", whose objectives included, e.g., "the reduction of air pollution down to the levels that minimize

their harmful effects on the health of the public and its most vulnerable groups, in particular". The Directive 2008/50/EC specifies the air pollution threshold and includes new air quality management mechanisms to assess zones and agglomerations. As stated in the judgment, Polish law transposed Directive 2008/50/EC in the *Prawo Ochrony Środowiska* (Environmental Protection Law Act), the superior act on the environmental management in Poland.

2.3. Poland's transposition of Directive 2008/50/EC and legal actions for clean air

Looking at the national transposition measures communicated to the European Commission concerning Directive 2008/50/EC, the first Act Poland adopted was the **Act of 17 July 2009 on the system for managing emissions of greenhouse gases and other substances** (*Ustawa z dnia 17 lipca 2009 r. o systemie zarządzania emisjami gazów cieplarnianych i innych substancji - USZE*). It gives a framework for the implementation of measures aimed at air quality protection. USZE presents rules and methods for the management of GHG emissions and other substances in order to avoid the exceedance of emission limit values; creates the National Basis on Emissions of Greenhouse Gases and Other Substances, to which entities that conduct activities producing emissions present reports on their impacts (Art. 6 and Art. 7 USZE). In addition, the Act set the rules for emission management and guidelines to avoid exceedance of national emission limit. It introduces the National Green Investment Scheme and regulates projects in the framework of the Clean Development Mechanism. Moreover, the law specifies the role of the National Center for Balancing and Management of Emissions (KOBiZE) in charge of the supervision of the EU Greenhouse Gas Emissions Trading System (Art. 3). In 2012, the **Act of 13 April 2012 amending the Environmental Protection Act and certain other acts** (*Ustawa z dnia 13 kwietnia 2012 r. o zmianie ustawy - Prawo ochrony środowiska oraz niektórych innych ustaw*) amended the Act of 17 July 2009. The **Act of 13 April 2012 amending the Environmental Protection Act and certain other acts** (Dz. U. of 2012, item 460), transfers the requirements of the Directive 2008/50/EC into the Polish legislation. In 2019, the **Act of 13 June 2019 amending the Environmental Protection Act and the Crisis Management Act** (*Ustawa z dnia 13*

czerwca 2019 r. o zmianie ustawy – Prawo ochrony środowiska oraz ustawy o zarządzaniu kryzysowym) amended the Environmental Protection Act.

The annual air quality assessment shall comply with the concentration limit of specific substances defined in the national law and EU Directives. Directive 2008/50/EC states that in case of exceedance of limit values over the period designated, air quality programs should adopt adequate actions to keep the duration of the exceedance as brief as possible (Directive 2008/50/EC). (Adamczyk, Piwowar, and Dzikuć 2017)

Article 91 of the **Environmental Protection Act** (Dz. U. of 2008, No. 25, item 150, as amended) states that “*an air protection program must be developed for zones where exceedances of the limit levels or target levels, where applicable plus the margin of tolerance, were found for at least one substance*”, out of the substances set out in the **Regulation of the Minister of Environment as of 24 August 2012 on the levels of certain substances in the air** (*Rozporządzenie Ministra Środowiska z dnia 24 sierpnia 2012*). The health protection evaluation covered 46 zones: agglomerations, city zones, and zones, following the criteria established for *Rozporządzenie Ministra Środowiska z dnia 24 sierpnia 2012*: the protection of human health and the protection of plants. The evaluation of the achievement of the standards introduced for the protection of human health considers 12 substances (*Rozporządzenie Ministra Środowiska z dnia 24 sierpnia*): sulfur dioxide SO₂, nitrogen dioxide NO₂, carbon monoxide CO, benzene, C₆H₆, ozone O₃, particulate matter PM₁₀, lead Pb in PM₁₀, arsenic As in PM₁₀, cadmium Cd in PM₁₀, nickel Ni in PM₁₀, benzo(a)pyrene B(a)P in PM₁₀, particulate matter PM_{2.5}. Evaluating the achievement of the standards introduced for the protection of plants considers three substances (*Rozporządzenie Ministra Środowiska z dnia 24 sierpnia 2012*): sulfur dioxide SO₂, nitrogen oxides NO_x, ozone O₃.

Air quality evaluation in a specific area is managed in Poland by the Regional Inspector of Environmental Protection responsible for the environmental issues. The assessment involves the Environment Protection Inspection, a practice commanded by the minister and based on air quality monitoring. The practice gives rise to the division of zones. In particular, Regulation of the Minister of Environment of 2 August 2012 on the zones where the air quality assessment is performed (*Rozporządzenie Ministra Środowiska z dnia 2 sierpnia 2012*) rules on zone classification. Class C classification implies the need

for the zone in analysis to implement an air protection program (APP). Classifying a zone as class C or B means that only a precise restricted area inside that zone presents limit values exceedance.

The **Regulation of the Minister for the Environment of 13 September 2012 on the assessment of the levels of substances in the air** (*Rozporządzenie Ministra Środowiska z dnia 13 września 2012a*) defines the limit level of specific substances and the schemes for the evaluation of their concentration values in the atmosphere; the number of tolerable exceedances and the classification of measurements; the criteria for conducting the evaluation.

In addition, the following Regulation of the Minister of Environment defined the methods to measure exposure indicators for a city or agglomerations and evaluate the accomplishment of the exposure concentration commitment. (*Rozporządzenie Ministra Środowiska z dnia 13 września 2012 r. w sprawie sposobu obliczania wskaźników średniego narażenia oraz sposobu oceny dotrzymania pułapu stężenia ekspozycji*).

Moreover, the Regulation of the Minister of Environment of 10 September 2012 on the scope and method of transmission of information on air pollution (*Rozporządzenie Ministra Środowiska z dnia 10 września 2012*), establishes the obligation to transmit a report on exceedances of limit values for class C zone including causes determining the exceedance.

It should be noted that the Air Protection Program aims to offer corrective measures to succeed in reaching limit values standards on human health and environment protection in areas exceeding concentration targets. Therefore, the APP should include the analysis of bad air quality and the causes within the specific area; the amount of people exposed to the pollutants; the definition of corrective procedures aimed to enhance air quality conditions including costs and expected results.

Another regulation, the Regulation of the Minister for the Environment of 14 August 2012 on the national exposure reduction target (*Rozporządzenie Ministra Środowiska z dnia 14 sierpnia 2012*), pursued the objective of mitigating exposure to PM_{2.5} to the maximum limit of 18 µg/m³.

The most recent measure taken by Poland and communicated to the European Commission as part of the implementation of Directive 2008/50/EC is the **Regulation of**

the Minister for Climate and the Environment of 11 December 2020 on the assessment of the levels of substances in the air (*Rozporządzenie Ministra Klimatu i Środowiska z dnia 11 grudnia 2020 r. w sprawie dokonywania oceny poziomów substancji w powietrzu*) specified the methods to evaluate the volume of substances in the air and terms for the measurements; limit values concentration for specific substances in the air and the number of tolerable exceedance; criteria to identify measuring sites considering emission sources.

Air Protection Programmes (APP) and Low Emission Reduction Programmes (LERPs)

The main challenge of Polish public policies related to air quality is the failure to comply with the limit of the number of days imposed for exceeding the maximum daily average level of PM10 and the maximum annual average level of PM10 and PM2.5, and exceeding the maximum value of benzo(a)pyrene. Poland's poor air quality conditions are attributable to low emissions, mainly from the urban and household sectors. They comprise domestic sources of heat production and hot water generation and individual sources of heating and transportation.

In 2003 and 2004, Poland formulated the first **Air Protection Programs (APPs)**. Environmental authorities identified 161 zones between 2003 and 2006 to comply with APPs. Up to 2006, the total amount of zones classified in Poland was 362. Among them, 100 zones of the total amount recorded exceedance of PM10 standards. However, new methods for classifying zones were launched in 2006 (thus, a zone corresponded to a more significant portion of territory), and the number of zones identified dropped to 170. Zones classified for the APPs included a more expansive area; as a result, the exceedance of PM10 and benzo(a)pyrene limit values made the implementation of APPs in 100 zones necessary. On the contrary, the reason is not an improvement in air quality conditions but rather a decrease in the number of zones identified. *Rozporządzenie Ministra Środowiska z dnia 2 sierpnia 2012* further lowered the number of zones to 46. Consequently, 45 out of the 46 zones identified presented exceedances in the concentration of particulate matter PM10 and PM2.5, nitrogen dioxide, benzo(a)pyrene, benzene, and arsenic dioxide, which made necessary the adoption of APPs in all 45 zones. By 2010, all Polish regions

implemented APPs because of exceedances of the limit values for particulate matter PM10 and benzo(a)pyrene.

To sum up, the exceedance of PM10 limit values and benzo(a)pyrene target values was the main reason for the adoption of most of the APPs. In particular, urban and household sectors (i.e., the low emission) presented the highest emissions rate of all the toxic, polluting substances. Lesser Poland, Silesian, and Pomeranian regions presented the highest share of exceedances. (Schönfelder 2010).

Looking at pollutant substances, it emerges that 36 zones out of 46 presented exceedances of PM10 limit values and 24 zones for PM2.5 (also considering the threshold for tolerable exceedances applied), 4 zones presented non-compliance with concentration standards on nitrogen dioxide, 42 zones for B(a)P, 4 zones for arsenic, and 6 zones for ozone. Analysis of pollutants sources shows that the leading accountable cause of the exceedance of PM10, PM2.5, and B(a)P was the domestic heating systems. Moreover, B(a)P limit values exceedances were more evident during the winter period in many places and perpetuated for multiple years. (*Krajowy program ochrony powietrza 2015*).

Environmental authorities examined the air protection instruments in the scheme of the APPs for technical limitations. The findings reveal that APPs (*Krajowy program ochrony powietrza 2015*) lack a comprehensive analysis of corrective actions and the costs to adopt them; lack rules for controlling the adoption of corrective actions; present a partial review of air quality and emission sources. These programs identify **Low Emission Reduction Programs (LERPs)** as the most effective corrective tool in terms of corrective action. However, LERPs do not have a legal foundation in legislation.

Instead, LERPs are funding programs aimed at citizens to replace aging heating systems. The purpose of the program is to help households meet the costs. Funding may be paid through contracts entered into with households or financing programs articulated through municipal authorities. The program's ultimate goal is to reduce the use of fossil fuel as the primary source of heating. New heating systems that replace older, less efficient ones are, in fact, gas-fired or provide a type of electric heating. The authorities responsible for implementing the programs are the municipalities.

Therefore, it emerges that many of the initiatives implemented by Poland in favor of air quality concern municipalities. Looking at the air quality conditions in the most populous urban centers, the situation appears critical. Suffice it to say that in 2013 the city of

Krakow, in southern Poland, was the third city with the most polluted air with toxic substances in the whole European Union. In order to decrease polluting and highly toxic emissions dangerous to human health, until 2018, in the city of Krakow, the authorities imposed a ban on the use of solid fuels, especially coal, in domestic heating systems. (Adamkiewicz and Huscher 2014). At the national level, however, the situation is no better. Data on the impact of pollution on people show that in Poland, for every 100,000 people, 507 people die from diseases closely related to air pollution. (Wojtyniak et al., 2012).

Over time, therefore, interventions aimed at improving the efficiency of domestic heating systems became widespread, particularly those aimed at replacing old boilers that were low on energy efficiency and emitted large amounts of pollutants into the air. In this regard, LERPs programs aimed to implement these replacements by favoring, in particular, more environmentally friendly energy sources (gas and oil) and the installation of more modern and efficient systems from the point of view of efficiency. The additional step would have been adopting even cleaner sources such as renewable energy sources, to the detriment of more polluting ones. An example of this is the attempt to introduce solar panels in buildings to heat running water—alternatively, the attempt to construct thermally efficient buildings and offices. The need to implement these proposals comes from considering the total emissions produced according to the fuel used. Coal-fired boilers have the highest environmental impact due to the high concentration of CO₂ emitted into the air. An oil-fired boiler impacts air quality equal to more than half the impact of a coal-fired boiler. In contrast, a wood-fired boiler appears to be the heating system with the lowest environmental impact.

For these reasons, introducing a program like LERP aimed at replacing outdated heating systems appeared necessary. However, analyzing the total environmental impact of program implementation reveals limitations. These issues arise from questions related to implementing new heating systems and the disposal of removed ones. Authorities have questioned whether energy performance justifies the new environmental impact brought by the introduction of new systems. Thus, it appears that LERP programs consider only the benefits shown by a direct comparison between an old and a new boiler, but at the expense of a broader assessment of the environmental burden to be borne. Nevertheless,

LERPs is good practice for an intervention aimed at the energy efficiency of domestic systems, the leading cause of poor air quality in Poland, in urban centers where the highest percentages of toxic substances are concentrated.

3. Historical legacy revisited

This section looks at the background through historical reconstruction of the soviet legacy and EU enlargement. The historical trend will allow reconstructing the history of the case from the roots of the Polish background to the implementation of the Directive 2008/50/EC and the actors and factors responsible for its compliance. It provides crucial considerations that distinguish Poland's social, political, and economic background. Accordingly, country-specific variables, such as legal culture and administrative traditions and state power and state capacity, were the analytical focus accounting for differences in non-compliance. After joining the EU in 2004, Poland has increasingly become an influential political actor. One of the fields where the country's impact was most clear is EU environmental and climate policy. As the historical background shows, Poland had to work on a structural process of capacity building in the first phase. Studies on enlargement provide insights into the Europeanisation of CEE countries, their pre-enlargement background, and European legislation adoption. The historical reconstruction of the Polish background allowed tracing the inherent characteristics inherited from the past applied to a political economy perspective to understand the particularities of the Polish situation still specific to the Polish case and the relevant actors influencing the sustainable energy transition.

3.1. Historical background and Soviet Union legacy

The Soviet Union dominated Poland's domestic policies from 1945 to 1989. Soviet control of Poland following the end of World War II drastically reformed the country's state institutional system. The Soviet authorities gave birth to a political organization based on the single-party system, the Polish United Workers Party (PUWP). In addition, they introduced the rule of the state-owned property, replacing the private property system, and the economy structure followed the logic of central planning. In an early historical phase, economic centralization led to positive growth results. Soon, however, the system proved less and less suitable for dealing with more complicated economic issues due to poorly directed investments and very high-interest rates. As a result, as early

as the 1960s, there was a negative trend in the Polish economy's growth curve, fueled by negative consumption rates.

In the 1990s, the post-communist nations of CEE began a complicated political and economic transition towards their transformation into market economies and liberal political systems. While preparing for the transition to a market economy after 1989, Poland's economic system presented structural weaknesses as the legacy of the communist era. The main features were a still pressing presence of the state in all economic matters, a commercial sector largely dependent on the Soviet market, and a hefty debt with foreign countries. In addition, a severe increase in prices occurred, and it led to an increase in wages and thus to hyperinflation status, which dominated the Polish economy for a long time. As well as other countries belonging to the former Soviet bloc, the state-dominated Polish economic system is heavily dependent on massive industrialization to the detriment of imports. An advancing industry, however, was accompanied by an inefficient service sector. From the sociopolitical point of view, the conditions inherited from the fall of communism were peculiar to the Polish case. The prevailing sentiment that animated civil society was a regained freedom, but the fear of the Soviet Union still frightened people, in addition to the poor economic conditions in which the Polish system lay. During the transition period, Poland adopted strategies involving the West to restore the Polish economy. In 1990 Poland negotiated with the International Monetary Fund (IMF) for Western countries to open the possibility for Poland to receive a stabilization fund of 1 billion dollars. The social composition of the interest groups involved in the economic transition consisted of consumer groups who were relatively weak in lobbying for their demands and interest groups who were strong on the labor side. The reforms needed in the Polish case would have to be more comprehensive than in any other case of economic reform, as the whole economic system required transformation and stabilization to overcome the inherited problems. Thus the most comprehensive reform program in the liberal direction launched in 1990 was aimed at the total privatization of industries and companies hitherto owned by the state. These radical reforms soon led to positive results in the growth of exports to foreign countries, an increase in the number of privatized properties, and an increase in foreign investment. All of this was made possible by the readiness of civil society for such a drastic reform package. The implementation of privatization might have been challenging to accomplish

if civil society had opposed it, but the end of the Soviet era had renewed a feeling of hope in society.

The third aspect inherited from the Soviet past is the environmental one, a consequence of an economic system primarily focused on the industrial system. The result was to inherit an environmental situation of the most severe kind, with very high pollution rates, especially in those regions rich in coal that housed the largest coal mines. After the Soviet Union collapsed, Poland inherited compromised conditions of economic and environmental status. Coal was during the Soviet Union era the primary source for the development of power plants and industry, as the primary goal of the adopted policies was, in general, heavy industrialization through the implementation of past programs on hard coal and lignite power plants. (Skjærseth 2018) Poland was the largest coal producer in Europe. (Szulecki 2017). Environmental and climate issues were not included in the political agenda and were not a topic that could define power relations between state actors nor influence public policy decisions (Bokwa, 2007). Even from the perspective of public opinion, citizens were not concerned about the consequences of industrialization, nor did they raise issues related to air and environmental quality. After all, the economic implications of mining and energy production industries were the only aspect society could consider. Not least, there was a total lack of monitoring of environmental quality and information about the actual consequences of pollution (Skjærseth 2018). Renewable energy sources were virtually absent instead of energy production based primarily on coal and lignite. Also, nuclear power as a source of energy production had spread in Europe. It represented a potential alternative to the less efficient coal and lignite-based production. However, the Chernobyl nuclear accident in 1986 led civil society to a clear rejection of the possibility of building nuclear power plants on Polish soil. (Skjærseth 2018).

Awareness of more efficient energy production would only come after 1989, when the Polish economy undertook the most considerable modernization. Indeed, the transition from a planned economy based on a centralized system to a free market economy meant for Poland and its entire economy and the energy system a long process of radical structural changes. (OECD, 2012). Massive reforms affected the energy industry, with the closing of some mines and the sale of other industries. After the fall of the Soviet regime, Poland undertook reforms that also affected the domestic legal system, primarily

because of Poland's future accession to the EU. The possibility of joining the EU prompted Poland to lay the groundwork for necessary reforms as early as the 1990s. As discussed in more detail below, the EU will be the entity that will exert the most significant pressure on Poland's environmental policies and energy choices. Regarding the use of renewable energy sources, it was not until 2000 that Poland adopted a strategy to develop renewable energy sources in its energy program. The driving forces behind Polish priorities were the role of Russia and the pressure from the EU. After joining the EU in 2004, Poland implemented a strategy to develop renewable energy, which increasingly played a significant role. Similarly, Poland wanted to ensure certain energy independence from Russia, the largest importer of gas on Polish territory. The issue of energy security always represented a critical factor influencing the dynamics of Polish public policy. In the 2000s, one of the heaviest reforms made to the energy industry saw the creation of four large groups gathering together many Polish companies. A company partially subordinated to the state (particularly the Ministry of Treasury) managed each group: ENERGA, Tauron, PGE, and ENEA. (Skjærseth 2018). Comparing the available data from 1990 when Poland started its transition path with data after it entered into the EU and, therefore, the influence exercised by the EU on Poland's energy choices, an improvement emerges. Air pollutants concentration and the percentage of liquid pollutants released into the soil and water appeared reduced. In addition to a change in energy choices, a more efficient industrial and production system appears to positively impact environmental quality compared to that prior to the reform period. On the other hand, the Polish government had to introduce new expenditures for environmental protection. (Balcerowicz 1995)

3.2. EU accession and EU's influence on environmental policies

Poland signed the EU accession treaty in April 2003. It immediately set about reforming its internal system with a view to accession to the EU in 2004. (Skjærseth and Wettestad, 2008a). The EU appears to be heavily dependent on energy exports to meet all of its needs. This trend became particularly evident when the energy conflict between Russia and Ukraine caused the EU to falter on its gas supplies. As a result, the issue of energy security came to the forefront of the European political agenda. Similarly, the issue turns out to be relevant to the Polish debate on energy choices since gas is the main alternative to Poland's massive use of coal, which we know originates Poland's poor air conditions. The EU has also taken significant steps at the international level, particularly in the talks held in the framework of the UNFCCC and its Kyoto Protocol. In order to meet the required obligations under the UNFCCC, in 2003, the Polish Ministry of Environment implemented the country's climate action plan ((Ministry of Environment, 2003). Emissions are a challenge for both Poland and the EU. Therefore, the EU has proposed that the developed countries bear the brunt of the emission cuts on an international level. Over the years, public opinion has increasingly demanded concise EU action on climate and air quality. In particular, there has been a need for planned and coordinated action, made even more pressing by rising oil prices. (Skjærseth, 2013)

Along with social pressures, European and Member State political attention has also become increasingly present on environmental issues. Although Poland has made extensive progress in air emissions compared to the pre-transition era due to the robust modernization undertaken in the 1990s, its climate plan appears to be partially effective in its implementation. One of the most visible limitations is that Poland did not yet have practical tools for integrating environmental measures with other policies in other policy areas at that early stage. In particular, the area most binding the policy changes is the production and use of coal as the primary energy source. On the other hand, however, the EU is increasingly convinced of achieving progressive decarbonization and drastically cutting air emissions. In order to achieve these goals, in 2008, the European Commission published a package of climate and energy measures binding on Member States. The package's primary purpose is to support the 20-20-(20) goals towards a low-carbon economy by 2050 (Oberthür and Pallemmaerts 2010). In practice, the package aims to provide Member States with guidelines and a pathway to achieve a low emission economy

and avoid a rise in the global average temperature of more than 2°C. Poland's response was quite negative, and it hesitantly accepted the package and then absorbed it. The reason behind the negative response is Poland's intention to continue with coal as a primary energy source for the foreseeable future.

3.3. Impact of enlargement on EU environmental policies

2004 and 2007 saw the EU carry out its two most critical eastward enlargements. They led to significant progress in European environmental and energy policies. In fact, for a long time, experts have questioned the actual effect that enlargement has had on environmental policies. Many experts predicted that the new Member States would negatively impact the advancement of European environmental policies because they made their access into the EU with minimal environmental policy packages, reduced awareness, and little interest in climate issues. On the contrary, public policy studies have shown that eastward enlargement did not deteriorate the development of EU environmental and climate policies. On the contrary, the EU has seen its legislation develop very rapidly and the new Member States. (Golub 1999, 744).

Furthermore, in evaluating such a large body of legislation as the environmental one, it is good to consider each state in its singularity instead of considering the whole group of EEC states. They certainly present similar characteristics, deriving from the communist heritage, and their positions have repeatedly influenced European decision-making processes. On the other hand, each of them presents specific internal characteristics different from the others. These differences have often prevented the EEC states from forming a solid coalition in European decision-making processes. A shared economic structure inherited from the communist past concerns the energy sector and dependence on imports from Russia. The problem lies in the possibility that energy and political issues overlap and that dependence on gas and oil is a political deterrent in international relations. For this reason, the issue of energy security assumed high relevance at the level of EU energy policies. (Maltby 2015).

At the international level, CEE countries participated in the UNFCCC and Kyoto Protocol negotiations. They created a coalition - the Central Group 11 (CG11) - and collaborated with the EU. (Massai 2006, 313). It underscores the consistent change in the approach of CEE countries compared to the accession period when climate issues played a subordinate role. CG11 adopted the Kyoto Protocol with the status of Economies in Transition (EIT). It allowed them to set lower emission standards than the EU15, but still significant considering the emission reductions in the transition period. (Ürge-Vorsatz et al. 2006). However, implementation of these decisions and subsequent measures taken at the EU

level has proven more difficult. One example is the European Emissions Trading Scheme (ETS) launched by the European Commission after the Kyoto Protocol, which aims to decrease carbon emissions. Poland, like other EU countries responsible for the highest emissions, has encountered difficulties in implementation. In particular, it was difficult for them to establish carbon emission values of domestic industries. (Skjaereth and Wettestad 2007, 272).

However, it is worth noting that scholars have identified cases, albeit limited, in which Poland, in particular, has had an impact on European environmental policies. (Copsey and Pomorska 2010). Once again, Poland's reliance on coal appears to be the trigger. Poland has responded negatively to the obligations imposed by the EU on decarbonization, bringing as justification the interest of defending primary national interests superior to environmental issues. It all boils down to the massive use of coal, the driving force behind Poland's poor air quality. Therefore, the scholars conclude that the negative attitude adopted by Poland results in a negative influence on EU environmental developments and decision-making. An excellent example of this in the decision-making process is the oppositional attitude adopted by Poland in the area of greenhouse gas reductions. Poland has opposed the European Commission's proposal of 2010 to increase greenhouse gas emission reductions to 30% by 2020 (Skovgaard 2010: 10). The following year Poland opposed further raising the threshold for GHG reductions by 2050. The conclusion, then, is that Poland rejects ambitious climate goals in favor of protecting domestic industry. Also, in 2012 Poland blocked further measures aimed at carbon reductions. (Euractiv 2012).

Furthermore, in 2015, Poland, in coalition with seven other CEE countries, opposed the desire to extend carbon reductions from 2017 to 2021 as proposed by the European Commission (EU Observer 2015). An analysis of the decision-making process shows that numerous concessions were made to the new Member States to adopt the new requirements to their national system. In fact, in the end, the Member States reached a compromise solution that includes reducing GHG emissions by 40% by 2030.

In conclusion, some CEE countries hurt the efficiency of EU decision-making. On the other hand, enlargement did not lead to building an alliance of CEE countries stably opposed to EU environmental progress. Instead, their crucial role in critical issues such as energy security and dependence on gas imports must be recognized.

4. A Europeanization framework for understanding EU environmental policy implementation in Poland

This chapter aims to illustrate the theory underpinning the project: to study what Europeanisation is and make it a subject of investigation. Therefore, Europeanisation is the primary theoretical justification of the project. Moreover, studies on European integration and governance allow having a broader theoretical framework when considering a particular Directive and its implementation in a specific country.

After joining the EU in 2004, Poland has increasingly become an influential political actor. One of the fields where the country's impact was most clear is EU environmental and climate policy (Szulecki 2017). Studies on enlargement provide insights into the Europeanisation of CEE countries, their pre-enlargement background, and European legislation adoption. It was also the case when the accession of the ten CEE countries (plus Malta and Cyprus) in 2004 and 2007 strengthened the discussion about environmental laggards in the EU (Skjærseth and Wettestad 2007). Indeed, the CEE countries have given many signs: inefficient administrations, legacies of the communist era, weak organization, and limited levels of socio-economic improvement (Börzel 2009; Börzel and Buzogány 2010).

Europeanization theory conceptualizes the growing domestic influence of the European Union on the Member States. Europeanization has an internal influence on Member States, political processes, institutional and administrative structures, and domestic policies. Nevertheless, policy change depends mainly on defining stakeholders' preferences at multiple levels and their power to influence decisions. Issues that represent pressure for Member States result in the need to make changes in public policy. The literature has long investigated what causes best explain policy change in Member States under the Europeanization hypothesis. For this reason, Europeanization studies have strong relevance when applied to EU environmental policies. Thus, there is a substantial mismatch between Poland's environmental policies and those of the EU, which results in an intense pressure for adaptation generated by Europeanization in Poland. The result is an internal shift in the content of public policies. The case study analyzed of the Air Quality Directives highlights the interaction between domestic actors that positively or negatively influences the successful implementation of the Directive 2008/50/EC. In this

analysis, the Europeanization theory acknowledges the fit/misfit hypothesis to investigate the relevant domestic factors. In this regard, it recognizes structural changes and includes the power of actors and factors. The Europeanization theory also explains why the EU has played a crucial role in the institutional and political transformation of Poland.

Moreover, the environmental *acquis* had expanded considerably, making its implementation more expensive. The *acquis communautaire* on the environmental field includes more than 460 pieces of legislation. Within this extensive list, there are various measures concerning air quality. (Vasev 2017)

Indeed, it is crucial to consider the notion of multilevel governance in a case where several levels are analyzed: European, national and local. Furthermore, it is necessary to refer to public policy analysis studies to understand the policy development cycle in question. In this regard, studies on implementation and non-compliance have special attention. EU policies produced in Brussels demand legal implementation and practical application in the Member States. In theory, EU law replaces national laws and established practices. In practice, there is considerable cross-policy, cross-temporal, and cross-national variation in compliance with EU law. In past decades, the literature has attempted to clarify what most scholars classified as a growing compliance issue in the EU (Treib 2014; Angelova et al. 2012). Qualitative studies usually concentrate on policy applications within states that lead to the legal adoption (or non-adoption) of EU policies or their practical implementation (or non-implementation). These studies highlight a substantial implementation gap (Treib 2014). Instead, many studies arise from the hypothesis that the EU suffers a compliance dilemma and clarify why. Specific case studies of various parts of EU environmental legislation mainly motivated investigation (Bondarouk and Mastebroek 2018). Scholars located the significant reasons for non-compliance at the Member State level. Applying public policy studies to the case in analysis, an implementation gap occurred in implementing the Air Quality Directives. Investigating the reasons for this gap is one of the objectives of this project.

For this reason, the project is not just another contribution to the general study of Europeanisation. Still, it focuses on environmental policy and the implementation of one specific Directive (2008/50/EC) in Poland. However, the theory and the method used behind this project can be regarded as valid whatever the European policy under consideration and whatever the country considered. It provides crucial considerations that

distinguish Poland's social, political, and economic background. Accordingly, country-specific variables, such as legal culture and administrative traditions and state power and state capacity, were the analytical focus accounting for differences in non-compliance.

4.1. EU Enlargement and goodness of fit

Europeanization theory is a conceptual framework that conceptualizes the growing influence of the European Union on the Member States. According to the case in analysis, Europeanization acknowledges the fit/misfit hypothesis to investigate the relevant domestic factors. In this regard, it recognizes structural changes and includes the power of actors and factors.

Although the two processes of Europeanization and European Integration are usually separated analytically, they are empirically correlated. (Schmidt and Radaelli 2004). Europeanization is the domestic impact of the EU on Member States, but policy formulation that impacts Member States depends on European integration. (Schmidt and Radaelli 2004). Thus, following this approach, most of the literature on the European integration process refers to the EU's domestic impact as "Europeanization". Europeanization process has profoundly invested CEE countries, and the EU has played a growing role in the political and economic development of these countries, of which the most relevant aspects concern the domestic institutional structure and the contents of public policies, of which environmental policies are one of the most representative examples. 2004 saw the most significant eastward enlargement of the EU. Poland joined the EU that year. The adoption of European legislation was not limited to the mere transposition of the rules into national policies but rather implied a notable domestic change through practical implementation. Membership determined strong intrusiveness in domestic politics. It emphasizes the influence exerted by the EU on domestic institutions and public policies and thus by Europeanisation. The adoption of European legislation also depended on the single State's readiness to accept it, and at the time of accession in 2004, Poland had a great ambition to join the EU.

The influence of the EU in the CEE countries, and therefore also in Poland, can be explained through three models: external incentive model, social learning model, lesson-drawing model. In particular, the external incentive model follows the logic of the

conditionality policy and predicts that the EU establishes the adoption of its obligations as requirements that the CEE countries have to meet to obtain rewards by the EU (Schimmelfennig and Sedelmeier 2005). This model serves to explain accession to the EU and the adoption of European policies in Poland.

The package of legislation regarding EU environmental policies is one of the most extended. At the time of adaptation of EU legislation into national law, Poland had to adopt many environmental laws. In addition, the environmental criteria to be met by Member States are among the most demanding in the world. Especially for some countries, such as those of CEE, which presented intense misfit. Most of the literature analyzes the fit/misfit that Poland had at the time of enlargement, considering the economic, social, and political legacy of communism. Membership of the EU gave Poland a broad package of laws to which it had to adapt. The 'goodness of fit' approach considers differences between EU requirements and national institutions that could cause 'misfits', which urges Member States to change from the status quo (Knill and Lenchow 2002; Knill, 2001). The limits of the 'goodness of fit' approach underlined by scholars are that it does not consider domestic actors' preferences and appears static. (Treib, 2008). However, it has been operationalized in various ways, and it still serves as a powerful explanation. Applying this approach to Poland's climate and energy package implementation, actor preferences and involved domestic factors play a crucial role. The underlying assumptions are

1. Poland is motivated to maintain the status quo on coal;
2. 'misfit' between EU and Polish national levels involves energy-economic interests;
3. 'fit' between EU and Polish national levels involves a call for action on air quality protection.

The 'distance' between Poland's inherited energy-economic conditions, negotiating positions, and the ultimate EU result proves the degree of fit. All this conveys that a high incongruence between inherited energy-economic conditions, negotiating positions, and the ultimate EU result will rise misfits and may result in opposition from Poland's willingness and reduce the feasibility of policy implementation. (Skjærseth 2018)

It is logical to assume that the fit concerning environmental measures related to air quality standards was low. Also, the fit with the energy preferences was low. A representative explanation is that in 2012 the EU percentage share of coal consumption was 17 percent, while Poland's consumption was about 50 percent. On the EU average, 30 percent of electricity production comes from coal, compared to almost 90 percent in Poland. (Skjærseth 2018)

In all Member States, national environmental policies exhibit high levels of Europeanization. Nevertheless, in some states, the impact is more pronounced than in others. In particular, this is valid for all those states defined as "environmental laggards". According to scholars, this category includes the countries that joined the EU in 2004, including Poland. Underlying this assumption is that these countries present high levels of misfit between their national legislation and the *acquis* of European environmental legislation. At the time of their accession to the EU, they had undertaken major structural reform processes of their economic and political systems. It was also necessary in order for them to meet the European standards required for accession. The package of European environmental legislation to be adopted and transposed was immense. It was therefore foreseeable that effective implementation, particularly of some critical aspects, might be challenging. In the case of implementing the Directive 2008/50/EC under review in Poland, this possibility has proven to be true. For this reason, the case under consideration is an excellent example of how theories of Europeanisation can be applied to concrete cases and opens up the possibility of investigating the causes and effects produced. (Tanja Borzel)

4.2. Adaptation pressure for change

Studies of Europeanization indicate that the ease with which a country adapts to European policies depends on the "*goodness of fit*" of national policies concerning the *acquis communautaire*. It follows that the greater the mismatch between national and European policies, the greater the pressure for the transformation of national policies. Conversely, the greater the congruence between the European and national levels, the easier the country will adapt to European legislation. Since the environmental sector is one of the most regulated areas in the EU, European environmental policies have exerted intense pressure for change at the national policy level when adapting. For this reason, Europeanization studies have strong relevance when applied to EU environmental policies. Thus, there is a substantial mismatch between Poland's environmental policies and those of the EU, which results in an intense pressure for adaptation generated by Europeanization in Poland. The result is an internal shift in the content of public policies.

Issues that represent pressure for Member States result in the need to make changes in public policy. The literature has long investigated what causes best explain policy change in Member States under the Europeanization hypothesis.

Scholars have identified five main mediating factors: external pressures and problems; fit between European-level policies and national political legacies; policy preferences; the ability of actors involved to solve problems in a given political and institutional context; and ideas and discourses (Schmidt and Radaelli 2004). This explanation can be found in Poland's environmental policies, as environmental issues have become increasingly important at the European level, and Poland had very underdeveloped national environmental policies. In environmental issues, the impetus for change came from the global challenges of climate change and the need for sustainable development and the EU Commission to strengthen national environmental legislation to create an increasingly green Europe. In addition, policy preferences have determined energy choices, just as the actors involved differ in their degree of power and influence over others and policy change.

Some scholars also provide an alternative explanation for Poland's growing opposition in European decision-making. The hypothesis is that Poland never wanted to adopt

European climate and energy measures but was 'forced' or pressured to accept them because of two relevant circumstances: first, the global salience that environmental issues have assumed, and second, the '*pressures of conditionality*' that bound Poland to accept a package to adapt to European standards upon accession. According to this hypothesis, the EU pressure does not consider the actual political preferences of the states that consequently, under EU pressure, accept packages they do not want. (Skjærseth 2018). In the present case, this hypothesis can match Polish policy's willingness to defend its coal industry. However, over time the political preferences may change, and there is more congruence between the preferences of the state and the European demands.

4.3. Implementing EU environmental legislation and goal attainment

Scholars have been conducting studies on the implementation of European policies since the 1980s. (Treib, 2008). The first phase of the research analyzed administrative capacity for implementation; the second phase drew a link between policy implementation and Europeanization theory, focusing on the European integration of states. (Olsen, 2002). The object of the investigation is the degree of compatibility between national legislation and the institutions responsible for its implementation, with the European policies to be implemented, thus crossing national and European policies. According to this approach, which is ideally suited to the case considered, implementation failure derives from the "goodness of fit" level and the EU's pressure on the country to adopt EU legislation. (Knill and Lenchow, 2000; Knill 2001). In this context, a qualitative approach to the study allows for investigation by looking at the application of theory on individual cases, while a quantitative approach focuses on studying the legal transposition of measures. (Treib, 2008; Skjærseth 2018)

Implementation means "to bring something into effect" (Weale 1992:43). More broadly, implementation implies the process of transposing EU measures into national legislation. The result is a change in policies and the actors' attitudes, which may play a role as facilitators of policy change or as opponents of transposition. From a legal perspective, we look at the implementing measures adopted by the state, such as acts, laws, and amendments. Otherwise, implementation is about the heart of the policy at hand: the actual creation of measures and policies (such as reforms, taxation, subsidies) and the change in the actors' behavior. (Skjærseth 2018)

Given these definitions, each state confronts the new policy with a different attitude: a state may oppose the content of the legislation, support that policy, or passively accept it. If the Member State opposes the legislation, there may be a legal issue with the European Commission and ECJ. It is the case with Directive 2008/50/EC under review, subject to an infringement procedure by the European Commission and referred to the ECJ. On the contrary, in the event of support from the Member State, it will take an active and participatory attitude in the life of the measure. One can expect a streamlined transposition that meets the requirements. The third possibility is the case where the state

reluctantly accepts the European measure, neither supporting nor opposing it. The expected implementation will be limited to the absorption of the legislation. (Skjærseth 2018)

Given that the implementation of a measure involves all levels of governance (European, national, local), a multi-level governance approach seems indispensable to define the implementation. The main factors involved in defining the implementation of a policy are fit/misfit, pressure from the EU on Member States, congruence between the standards imposed by the EU, and the national status quo. Therefore, in the case study under analysis, we must consider a decentralized structure (multi-level governance) of the environmental policy implementation process. Let us assume that the EU's objective is to improve air quality. We assume the presence of misfit, a certain amount of EU pressure on Poland, and the dependence of the Polish energy field on coal. The achievement of the EU objectives depends on implementing the relevant legislation, in this case, the implementation of Directive 2008/50/EC. The case shows that the achievement of the targets is made problematic due to the failed implementation by Poland (and many other European states). However, the subject matter is constantly evolving, and the European and national levels continue to influence each other. (Skjærseth 2018). In practice, goal attainment accomplishes when policy objectives become tangible results. Looking at the results achieved allows one to assess whether or not the implementation was successful. In the case study at hand, first the European Commission and then the ECJ highlighted the shortcomings in the implementation carried out by Poland of Directive 2008/50/EC and condemned Poland for not meeting some of the obligations imposed in the Directive 2008/50/EC and thus for the failure of the implementation. In general, the design of the European policy determines the level of success: if the expected policy outcomes are in line with the possibilities and preferences of Member States, the results will be easier to achieve, and thus implementation will be smooth; on the contrary, if the expected policy outcomes are potentially difficult to implement, a deviation or failure of policy implementation can be expected. (Bocquillon and Maltby 2017).

4.4. Measuring non-compliance and EU legal actions

The literature on Member States' compliance and implementation of EU environmental law is remarkably abundant (Börzel and Buzogány 2019). Compliance and implementation studies use several different tools to analyze the success of policy implementation. Most compliance and implementation studies of EU environmental policies are based on a qualitative assessment approach. Qualitative studies have the advantage of providing in-depth assessments of the implementation process. For example, the qualitative study in this thesis involves an in-depth analysis of an infringement procedure resulting from ineffective implementation and failure to meet imposed obligations.

Infringement procedures provide a more comprehensive analysis of non-compliance with EU legislation (Börzel 2003). Article 258 TFEU specifies that the European Commission may open infringement procedures against Member States that violate EU law. However, the analysis of infringement proceedings alone is not sufficient to explain the states' failure to comply with the *acquis communautaire*. With the infringement procedure, however, the EU wants to sanction that state for non-compliance. The sanction can be political in the case of the European Commission initiating an infringement procedure, or it can be a financial sanction with the intervention of the ECJ. The Maastricht Treaty introduced the possibility of imposing financial sanctions on Member States that have not complied with ECJ rulings (Article 260 TFEU). In this sense, increasing the cost of non-compliance becomes an instrument of the EU's pressure on the Member State to implement the measure correctly. A state that opposes the package must thus also consider the potential political and financial costs that would result from failed implementation. All in all, it is in the EU's interest that Member States can implement legislative packages without incurring penalties nimbly. It is therefore committed to providing Member States with the tools to achieve compliance. In the case at hand, Poland benefited from funding before it acceded to the EU, facilitating Poland's efforts to bring its environmental legislation in line with EU standards. At that stage, the new Member States also benefited from technical as well as financial assistance. In the environmental policies field, the Cohesion Fund and EU programs such as the Financial Instrument for

the Environment (LIFE) provide funding to help Member States comply with EU environmental legislation.

Country case studies highlight how effective the measures adopted at the European level to strengthen the capacity of new Member States to achieve European standards have been. (Buzogány 2009). The case under analysis is proof of this: the influence of the EU and the tools made available facilitated the rapid improvement of environmental conditions in Poland. However, it clarifies that there are still significant gaps in the capacities of some Member States that have difficulties in implementing EU legislation (Börzel 2003, 2009).

4.5.Explaining policy change

The studies on Europeanization analyzed so far have explained how Europeanization has an internal influence on Member States, political processes, institutional and administrative structures, and domestic policies. Nevertheless, policy change depends mainly on defining stakeholders' preferences at multiple levels and their power to influence decisions. The case study analyzed of the Air Quality Directives highlights the interaction between domestic actors that positively or negatively influences the successful implementation of the Directive 2008/50/EC. According to this pattern, the power relationships between state authorities, interest groups, civil society, NGOs, local authorities, and government can determine policy change. Based on the power they hold to influence policy, these actors mobilize through legal, electoral, or corporate action for or against a given policy change.

In many cases, the result can be that the implementation of a measure turns out to be incorrect or biased, as is the case with Air Quality Directives. (Börzel and Risse 2002). This approach looks at the internal dynamics and considers the preferences of actors under the basic assumption that they can account for the failure or success of European policy implementation. In the next section, the leading domestic actors involved in the case of Directive 2008/50/EC will be further analyzed. The actors selected in the analysis turn out to be relevant in that they can influence public policy. Their preferences may lead to changes in the status quo or reinforce it. They include governmental actors, local and administrative authorities; actors that have a role in the energy field and particularly in the coal industry and energy transition; actors from civil society whose push can be decisive, including NGOs, workers' unions, the population. A change in the actors' preferences can lead to a reshuffling of interactions and power-play relationships. A new government can potentially introduce new policy priorities that reshape the entire landscape. A government may hinder or facilitate a policy change. Civil society actors may be more or less incisive in claiming their interests based on their preferences. Industry sectors may lose or gain the power to influence policy choices based on their priorities. In general, it is necessary first to determine how European goals burden the domestic actors involved and then consider their preferences. The general assumption is

that their relationships may influence the implementation of EU legislation and lead to implementation failure. (Skjærseth 2018)

In addition, the literature has also developed alternative explanations for the role of actors in non-compliance with EU legislation. One of these is a more sociological explanation (Checkel 2001; Börzel et al. 2010), according to which European citizens are relatively supportive of the EU's environmental policy package but prefer not to cede sovereignty to European institutions at the expense of state institutions that instead have to maintain control over social affairs. This theory illustrates how public support for transferring legislative capabilities in a specific policy field to the EU may result in compliance or non-compliance. (Zhelyazkova et al. 2016).

4.6.Methods

The project aims to provide an overall picture of the Polish case study in implementing Directive 2008/50/EC. The main contribution is to bring these findings into the interpretive framework to understand better the complexities of the many mechanisms affecting the Polish case. The methodology adopted includes a mix of qualitative analysis, literature review, case-law approach, and historical analysis. This project relies on a literature review of primary sources (such as statements provided by ministries, unions, and NGOs, company press reports and annual reports, as well as a variety of articles and blogs); and secondary sources (such as scientific peer-reviewed journals, articles, reports, and books) in the English language. First, state of the art of research on the governance of the Polish environmental field and research on air pollution and the health impact of coal were analyzed. Second, relevant reports and documents from essential entities such as Eurostat, the European Environmental Agency (EEA), the World Health Organization (WHO) have been reviewed. Lastly, articles on the role of coal in Poland and the rest of Europe were examined.

Additionally, databases, e.g., by the Central Statistical Office of Poland, have been consulted. The analysis is guided by the conceptual framework focusing on the relevant actors and factors rather than dependent and independent variables. Many explanations of Europeanization have been studied by other authors.

5. Domestic drivers and barriers for policy change

In the theoretical analysis, it emerged how the preferences of the actors involved in the case study could influence the implementation of European legislation into national legislation and the achievement of European objectives. The project continues with investigating factors (political, economic, social) that facilitate policy change at the national level and those that hinder it. We will see how the intersecting variables, in this case, are multiple and closely interrelated. Within the domestic dynamics are positioned the main actors. Their interaction can compromise the fulfillment of the obligations laid down by European legislation. The following sections aim to reconstruct the primary factors and actors that have played a role of drivers or barriers in the implementation of Directive 2008/50/EC in Poland. The actors involved can be classified according to their preferences and their power to influence policy change and each other. The aim is to get a comprehensive picture of why Poland has failed to comply with Directive 2008/50/EC.

5.1. The EU factor as a driver

EU pressure and influence: without external EU pressure, environmental and energy policies in Poland would not be as developed as they are today. (Jankowska 2010). In particular, the influence of the EU explains the very fact that Poland has had an increasing development of environmental policies. During the transition period, the EU was seen by CEE countries and Poland as the model to be inspired and emulated for fruitful social, political, and economic change. (Ancygier, Szulecki 2014a). When Poland's accession to the EU became a negotiable reality and not just a possibility, it was necessary to comply with the *acquis communautaire*. The EU imposed its conditionalities to facilitate harmonization between national and European policies. These processes gave a boost to the accelerated development of environmental policies. Even after conditionalities ceased functioning as a tool for achieving legislative compliance, European demands continued to exert intense pressure.

As the historical background shows, Poland had to work on a structural process of capacity building in the first phase. Quickly Poland defined its energy priorities and established its preferences in negotiations. As time went by, its assertiveness in European negotiations grew, to the extent that it repeatedly opposed European proposals. In the present case, we have seen at length that after accession to the EU, toxic emissions into the air in Poland have decreased due to internal structural reforms. The EU has an extensive legislative package on air quality (European Commission). The primary demand of EU legislation is the significant improvement of air quality for the sake of ecosystems and human health. The EU calls for increased efforts from Member States to ensure that all meet the bold targets set by EU legislation. These targets are also built-in line with WHO air quality recommendations. In particular, air quality legislation addresses emissions of particular pollutants by setting limit values. (EIR 2019). The preamble is necessary to understand how the EU facilitates policy change for improved air quality and compliance with Directive 2008/50/EC. Comparing the emissions of toxic substances recorded in the transition phase with the emissions today, it is evident that they have decreased dramatically. Between 1990 and 2016, Poland registered the main improvements in decreasing sulfur oxides (SO_x) and ammonia (NH₃) emissions. At the same time, however, the concentration of PM_{2.5} fine dust in the air has increased in recent

years, as have emissions of nitrogen oxides (NO_x). (EEA, Air pollutant emissions data viewer (LRTAP Convention), 2016). However, the air in Poland is still among the most polluted in Europe, which requires further effort. In addition, European air quality goals are increasingly ambitious, and the EU increasingly pushes Member States to comply with them. The pressure exerted by the EU is also a facilitating factor for political change concerning the development of renewable energies to the detriment of the use of fossil fuels, gas, and oil. We know that the modernization process of the Polish energy sector is one of the most complexes. It was foreseeable that the energy transition towards renewable energy sources would be an objective to achieve later. Until the 2000s, Poland did not consider renewable energy as a possible alternative. However, partly because of the need to bring national environmental policies into line with European legislation, the European environment facilitated the introduction of support for renewable energy in Poland into the debate and negotiation.

In the theoretical chapter, it became clear that Europeanization has also had effects on domestic actors. The EU has increasingly pushed for the involvement of a wider group of actors in the evaluation and implementation of public policies, especially in salient issues such as the field of environmental policies. In particular, social consultations have played a primary role, materializing in additional pressure for the government. (Cianciara 2015).

5.2.Domestic factors stabilizing the status quo

Long policy change period: environmental policies usually set ambitious goals in the medium to long term. The results of some structural reforms are only visible and assessable after a long time because measurements take a long time, and structural adaptation to newly imposed standards may require prolonged efforts over time. Suffice it to say that the EU has defined 2050 as the time limit within which decarbonization must be achieved. It leaves room for reflection on the feasibility of specific reforms within a tight timeframe. In the case under consideration of the implementation of Directive 2008/50/EC, the gradual elimination of Poland's dependence on coal and lignite as the main drivers of the energy industry is a process that will take a long time. Recognizing that poor air quality has a very serious impact on the health of citizens exposed to pollution, timely action by national authorities is necessary. However, when analyzing the case's specifics, it is clear that the process is bound to take a long time. An example of a timely measure aimed at limiting pollutant emissions in the short term was the regulation adopted in 2017 by the Polish government (described in the previous chapters) setting standards for domestic heating systems, further strengthened in 2018 to the regulation setting quality standards for fossil fuels used in domestic systems. However, the actual implementation of the measures has shown that they have long transition periods to achieve their goals. Therefore, we can conclude that the long periods of political transformation represent an impeding factor for implementing the requirements of Directive 2008/50/EC.

Access to funds/budget and costs: The preceding chapters present an analysis of the instruments that the EU and the European Commission have adopted both to facilitate the compliance with European legislation of the new Member States legislation during the period of accession and transition, and the instruments still available to Member States for a smoother implementation of European requirements. The European Cohesion Fund and other specific projects such as LIFE Program are analyzed above. Member States are still required to make a sizeable financial effort to achieve environmental goals. In the specific case under consideration, the Polish government has allocated large amounts of money to implement programs aimed, in the first instance, at improving domestic heating systems. One example is the Clean Air Program of 2018, whereby the Polish government

provides grants and loans to households to replace old coal-fired boilers and promote energy efficiency in Polish homes. The "National Fund for Environmental Protection and Water Management's Clean Air Priority Program" is the largest project in terms of duration and budget launched by the Polish government to limit emissions from homes in Poland. (Sakson-Boulet 2020). Thanks to this program, Polish citizens have replaced about 3 million old boilers with more energy-efficient ones. As a result, authorities have registered a decrease in levels of toxins such as PM2.5, PM10, CO2, SO2, and benzo- α -pyrene. (Sakson-Boulet 2020). However, some limitations in the program's implementation occurred, particularly regarding access to the grant system. The problems concerned the distribution of financial resources and access to funding made available by the EU. In order to comply with these problems, the Polish government created the "Clean Air 2.0" program, which introduces new procedures for applying for funding. Therefore, we can conclude that the fact that the recipients of the funds may encounter difficulties in accessing funding may represent an impeding factor in achieving the set objectives, improving air quality, and thus in implementing the Directive 2008/50/EC.

Dependence on coal: this project has already extensively analyzed why the Polish energy sector is deeply dependent on coal. The analysis of the implementation of Directive 2008/50/EC reveals how the coal industry is a crucial factor in the policy puzzle. If the low air quality depends mainly on domestic heating systems, these are obsolete to use coal as the primary energy source. The political problem arises when the analysis of political preferences shows a clear political will in favor of defending the coal industry, still one of the main drivers of the Polish economy. This clashes with the decarbonization goals of the EU, which openly declares the willingness to minimize the use of coal as a vital energy source. We also know that Poland is the largest coal producer in Europe and hosts the largest coal mining and processing plants in Europe. These plants are also the most polluting in Europe in terms of CO2. As a result, the environmental impact that the most coal-rich regions experience is giant, spilling over to the entire country. For these reasons, it is clear why although Polish energy efficiency has improved considerably since the transition period, it is still far from European standards. Poland produces about 90 percent of electricity from coal and lignite, the highest number in Europe. In the electricity sector, coal has no competitors to replace it. Possible alternatives are

developing energy systems based on renewable energy sources; or increased dependence on gas. As far as the first alternative is concerned, the renewable energy market sector is slowly improving, especially in the wind, solar, and natural gas production. However, its utilization is not comparable to the power of the coal industry in the Polish market. The second alternative is related to the import of Russian gas and opens a crucial national and European debate on energy security and independence from Russia. This aspect is a factor to be analyzed individually due to the complexity of the issues it raises.

Therefore, Poland's dependence on coal is a factor impeding the achievement of air quality improvement targets and thus the implementation of Directive 2008/50/EC. In particular, although the discussion focuses on air pollution standards, the reluctance of the Polish government to put a brake on the coal industry is the main reason for the opposition between political preferences and political ambitions at the EU level.

Energy security: scholars have recognized that eastward enlargement has had the merit of bringing the issue of energy security to the forefront of the political agenda. The issue runs within the debate on energy transition and Poland's and the EU's gas and oil imports. While it is true that coal as an energy source poses serious questions about the state of the environment and air and human health, it is also true that the supply of oil and gas is dependent on Russia. Almost all of the oil and natural gas used in Poland are imported, mainly from Russia. On the other hand, coal is a resource widely present in the country, lowering its cost. Moreover, the supply from Russia is often linked to political and economic dynamics that can guarantee neither a sure supply nor political stability. The risk is that the oil and gas market becomes the scene of political clashes. Russia can potentially use gas and oil supply as a deterrent to exert political and economic pressure on Poland and the EU. Examples of this are the events in 2006 when in the aftermath of a dispute between Russia and Ukraine, gas supply to Poland dropped to 14% (Stern, 2006) or in 2009 when Russia ceased gas supply through Ukraine. The issue also raised concerns about prices, which Russia used as a tool to influence governments. At the time, Poland had the highest price to pay to Russia for gas imports of all other European states. For Poland, therefore, energy independence from Russia is a priority. (Szabo and Fabok, 2020). The Polish government also attempted the path of gas independence by building a gas transmission canal owned by the Polish state. In general, energy security implies ensuring secure supplies, securing better prices, and being energy independent. The issue

raises the concerns of Polish stakeholders and justifies governments to reduce the role of imported fuels in the Polish energy mix. Taking the benefits once again is the coal industry, which provides coal with more secure energy production from an independent perspective, increases exports, and reduces costs for Poland.

Political system and its interaction with the organizational field: In the previous chapters, we discuss the communist inheritance of the Polish political system because the current organizational system also has characteristics related to the inherited political system. In particular, according to scholars, the inherent characteristic of the country's governance is the volatility of elections, parties, and leadership that has caused situations of uncertainty over the years. (Millard 2009). Historical and cultural factors explain the limited legitimacy for a plurality of competing interests, which impacts the legislative process. (Cianciara, 2015, p. 74). Another aspect resulting from historical factors is the low tendency for public consultation, which impacts the nature of the political process. (Szulecki 2017). The political competition has had two main protagonists in recent years: the center-right Civic Platform (PO) party and the conservative-populist Law and Justice (PiS) party. As a result, changes in power lead to sudden political preferences and thus political changes. Indeed, changes in government composition and coalitions lead to legislative instability that develops in the volatility of the Polish political system. However, changing policy preferences are also related to interactions between the political field and the organizational field. The organizational field includes industrial actors, interest groups, trade associations, energy-producing companies. This model explains how the interaction between the two fields can account for legislative instability. Indeed, large state-owned companies that produce energy from coal dominate the Polish organizational field in the energy sector. Their interests and preferences (in favor of the coal industry) clash against the environmental challenges (opposing the massive use of coal). The dominant rationale is the protection of the coal industry, which has so far trumped the push for an energy transition that benefits the environment and air quality. This interaction is one of the factors that best explain why Poland has had difficulties in adopting European legislation on the environment and, in particular, on air quality. On the other hand, the push for a cleaner environment receives the European institutions' support and some Member States whose weight can be significant. In general, the model follows a straightforward logic that describes the organization of the political economy

of the Polish energy sector. If partially state-controlled energy companies generate tax revenue (through exports and energy independence), the state has an incentive to design policies that protect these companies. Similarly, it has a disincentive to actively and effectively implement European environmental protection obligations. The result of this interaction is thus a policy to protect the Polish energy industry (and the status quo) from external threats (such as EU climate policy) and maximize profits. The result is a stalemate dilemma that stands in the way of the policy change and implementation of measures for environmental improvement.

Low-quality heating systems in domestic buildings: As has been thoroughly analyzed, heating systems in Polish homes are the leading cause of air pollution. It is necessary to analyze the quality of boilers in households, the type of buildings and their energy efficiency, and the solid fuel standards to explain how this impacts the implementation of Directive 2008/50/EC. An explanatory picture emerges of how the quality of heating systems is an impeding factor in achieving the environmental and air quality targets set by the EU.

a. Low-quality boilers: the technical condition of boilers contributes to increased emissions of air pollutants. There is a tendency for central heating boilers in Poland to have relatively low efficiency, which does not meet the technical requirements. As a result, this negatively affects combustion processes and contributes to the increase in emissions. From the administrative point of view, controls on the condition of these plants are limited for energy certification and are rarely carried out. (Adamczyk, Piwowar, and Dzikuć 2017)

b. Buildings and energy efficiency: a large number of buildings in Polish cities were built before 1988 (National Census of Population and Housing 2011). In those years, energy efficiency was of marginal importance in construction. Today, however, we find that low building quality translates into high energy consumption for heating because homes have low standards of thermal insulation. Almost two-thirds of buildings in Poland have low energy efficiency. As a result, inefficient thermomodernization has hindered the improvement of energy efficiency for many years. (Institute of Environmental Economics).

c. Solid fuel standards: solid fuels dominate domestic heating heat production. However, 3.5 million buildings use inefficient solid fuel heat sources for heating. (CSO 2015). In

2015, an amendment to the August 25, 2006 Fuel Quality Monitoring and Control System Act (Dz. U. of 2015, Item 1361) introduced quality standards for solid fuels. According to the legislation, only coal of a specific quality can enter the Polish market. Together with the Trade Inspection Agency, the Customs Service is responsible for control (*Ustawa z dnia 25 sierpnia 2006*). (Adamczyk, Piwowar, and Dzikuć 2017).

Economic and financial factors

a. Lack of financial and legal instruments: it is a well-known fact that low air quality is mainly due to combustion in home heating systems. The so-called low emissions are the leading cause of exceeding the limit values for emissions of toxic substances into the air specified by EU legislation, particularly in the Directive 2008/50/EC under review. The analysis of domestic heating systems highlighted how tools aimed at the energy efficiency of buildings and the replacement of obsolete boilers could reduce the negative impact on air quality. However, these measures have high costs that sometimes exceed the financing capabilities of investors. In addition to financial instruments, the lack of legal instruments related to individual buildings exacerbates the problem. Applying legal instruments to domestic installations means controlling the levels of air pollutant emissions from each boiler. However, legal instruments exist only for public buildings and manufacturing plants and exclude domestic plants. Households can therefore be likely to have a disincentive to minimize emissions. The main instrument used by the Polish government for household financing is the emission reduction programs (LERPs), already described at length in the previous sections. (Adamczyk, Piwowar, and Dzikuć 2017). The limitations highlighted in the financial and legal instruments adopted by the Polish government in favor of households are the cause of the low interest in taking actions to improve the energy efficiency of their homes,

b. Heating Costs: The main reason why solid fuel boilers are so prevalent in Polish households is the low cost of solid fuels. Although the cost of heating with wood (biomass) is the lowest on the market, Polish households do not widely use wood as a source. The cost of heating with coal remains one of the lowest. Oil and liquid gas generate the highest heating costs, together with renewable heating, which is very high. (Adamczyk, Piwowar, and Dzikuć 2017)

c. Energy poverty: energy poverty is one of the most severe economic problems facing Polish households. On average, Polish households spend 12% of their income on heating

and energy. It is almost twice as much as the EU average. In 2016, about 4.5 million people classified by income as "energy poor." (Lis, Sałach, Świącicka, 2016).

d. Inherited economic system: studying the legacy of the communist past allows us to understand that some economic characteristics of today's Poland have their roots in the economy of the past. One of the most prominent features is that high industrial concentration is inherent in the socialist past of the Polish economy—moreover, that system based the industrialization plan on the use of cheap energy. The energy-intensive production structure today delivers an economic structure that has inherent productivity differences across firms and sectors. Thus, economic policies adopted before and during the transition influence the portrait of today's economic system. For example, some responsible factors are the central planning system, over-industrialization, inflation.

Fear of job loss: This factor attempts to explain why some sectors of the population, particularly workers in the coal industry, are reluctant to take action toward decarbonization. As the coal industry is one of the main drivers of the Polish economy, many families rely on the jobs that the sector provides. Thus, the possibility of a transition to a low-carbon economy leads affected workers to fear losing their jobs or having to change industries. In particular, the mining sector shows the most substantial concerns. In the past, transition governments have already ceased some Polish coal mines: the number of open and operating mines has decreased by 2/3, and the number of workers has dropped from 400,000 people to about 100,000 people in 2015. Fear of job loss has led to several protests and demonstrations by coal miners during the last 25 years of economic transformation. In addition, the coal mining sector is highly unionized. In August 2003, a government plan to restructure the mining sector led to protests and riots by 10,000 coal miners in Silesia and Warsaw. [Tadeusz Stalewski, Adam Szpak (2000)] In January 2015, 2,200 coal miners went on strike and occupied coal mines following the government's proposal to close the least profitable coal mines. [Paweł Kaczorowski, Paweł Gajewski (2008)]. In order to meet the European Union's plans to transition to clean energy, the Polish government also reached a social contract with the powerful miners' union, offering workers guarantees for their current jobs and plans for retraining. In this way, Warsaw solved a major political obstacle, given the power of the miners' lobby that defends more than 80 thousand jobs in the country. Nevertheless, retraining

miners can be problematic, considering that coal miners are relatively unskilled. In a survey done in 2015, 68 percent of respondents said they supported coal miners in their conflict with the government. (Central Statistical Office of Poland).

5.3 Stakeholders preferences and interplay: the power to influence policy change

This part of the study concludes with the analysis of the stakeholders that play a role in the failure or success of the implementation of Directive 2008/50/EC. The goal is to identify the actors and describe their preferences. Their policy preferences determine the attitude they take towards environmental legislation and energy choices. Although the impact of some actors on the implementation of Directive 2008/50/EC is more or less direct than that of others, the objective is to present the full range of policy players that have in some way influenced the implementation of the Directive 2008/50/EC. In many cases, the actors influence each other, as happens in cases of lobbying.

For this reason, it is necessary to delve into the central relationships created between the players to exert pressure on one another. This model allows demonstrating the power dynamics among stakeholders in Polish environmental governance. The analysis presents three groups of stakeholders: main political actors, actors in the energy sector, and local and public actors. Their classification is based on the identification of the level of power they hold to influence policies. Furthermore, the actors with the most power will be the ones who can impose their preferences on those of other actors and thus realize their policy preferences.

a. Main political actors

The lowest common denominator among the **main political actors** in Poland is their shared reluctance to EU climate policies. Polish politicians operate on two levels: domestic and European. Domestically, they propose regulations that favor the coal industry and the dominance of coal as the primary energy source. On the European level, they push to soften EU climate legislation. In the case study, political actors have repeatedly sought to limit the increase in allowable air emission limits. Poland's economic and energy dependence on coal thus resulted in repeated opposition to EU climate policies. (Braun, 2014; Zapletalová and Komínková, 2020).

Polish **governments** have traditionally opposed the EU's more ambitious climate targets, often playing an opposing role in negotiations. The only government that tried to reverse this course was that of Prime Minister Donald Tusk, who attempted to embark on a path called the "energy community" that aimed to accept higher Polish and EU energy dependence on gas imports from Russia in exchange for Poland's political agreement to adopt more ambitious climate targets. Polish governments have traditionally enshrined the power of coal in the Polish economy and supported the coal industry. Government reports highlight how for Polish governments, coal must remain the country's primary source of energy. An example of this is a report called "Poland's Energy Policy to 2030," which highlights how the government intends to maintain coal as the primary source of energy (2016 <https://euracoal.eu/info/country-profiles/poland/>).

The current **governing party PiS** (the "Law and Justice" party), has a solid pro-coal stance (Osička et al., 2020). After winning the election in 2015, the conservative PiS party implemented several measures aimed at centralization in state hands of control over the energy sector. In particular, PiS created a new energy ministry that collects authority previously distributed among five ministries. In addition, the government merged the partially state-owned mining companies into the new mining group: PGG. This reform also had the second purpose of saving some mining companies from bankruptcy. (EIA, 2016; Ancygier and Szulecki, 2016). It underscores, even more, the efforts of PiS to protect the mining sector. Subsequently, PGG acquired KW (the largest coal mining company in Europe) and later merged with KHW10 (Polityka Insight, 2017; Kuchler and Bridge, 2018). The state interventions mentioned above emphasize the close link between the Polish energy sector and state interests. It raises substantial doubts about the economic independence of the sector from the political will. Moreover, as seen in the previous sections, the political and organizational fields are intertwined, giving room for conflicts of interest.

Interplay with the energy sector: we see, therefore, that the energy sector is permeated mainly by the central involvement of government, and this compromises its integrity. Executive appointments within companies are motivated by political dynamics, and the leadership of these companies is no longer based on administrative skills and managerial

expertise but political dynamics. The partial state control of the companies expresses the government's strong influence on coal. As soon as its election in 2015, the PiS party replaced the managers of almost all state-owned energy companies, The Minister of the Treasury obtained 50 percent shares in the companies, and since 2016 it has obtained ownership rights over the partially state-owned companies Enea, PGE, Energa, and Tauron. The robust bond of the government to coal combined with the increasingly intrusive state and political presence in energy companies and coal mines explain the resistance to European environmental and energy policies.

One of the most representative cases of resistance to EU proposals is the opinion issued by the Council for Social Dialogue (which includes the government, the leading trade unions, the employers' association). The Council harshly criticized the EU's most ambitious climate policy because it would have "a destructive impact on the Polish economy." (Council for Social Dialogue).

b. Actors in the energy sector

All the considerations made so far conclude that the energy sector is the field in which the main economic, political and environmental interests converge. In the case study under consideration, we have seen how the government has increasingly attempted to exert its power to gain control of the energy sector. Reforms of the Polish energy sector towards an ecological transition to more sustainable energy sources are supported by the EU and some segments of the population but hindered by key political actors and stakeholders involved in the energy sector, who would otherwise lose great power. The main actors in the energy sector are the large companies in the coal industry, the mining companies, the miners' unions, and marginally the workers. Their power lies in their ability to influence policy preferences. They, therefore, hold power to influence political change. They are challenged by international and European efforts to decarbonize and the growing development of renewable energy. The strategies that Polish energy actors adopt to maintain the status quo are to exert pressure on domestic political actors to consolidate pro-coal legislation to the detriment of renewables, to fuel discourse on the primary economic role of coal, to fuel the rhetoric that coal is the source that best guarantees

energy security and independence from Russian gas. There is also recent talk of new "clean coal" technologies (Brauers and Oei 2020) that would allow companies to clean up their image of the environmental burdens of their emissions. This trend suggests that environmental issues are high on political agenda-setting and increasingly preponderant in political preference. Consumers' increasing focus on minimizing their impact on the environment has led even the most polluting of companies to explore green-washing strategies. In terms of the public, however, to date, the public and local authorities play a subordinate role in internal decision-making within the energy sector compared to coal miners' unions, utilities, and mining companies. It is the political actors who have the most influence over the energy sector. The influence between coal companies and political actors is reciprocal: the mining companies get support from the government, and the government gets control of them.

The state's control over energy companies increases the influence of the coal regime on policymaking (Szulecki, 2017, Szulecki, 2018). Mining companies gain political and financial support from the government. Thus, the power and heating sector remains anchored in its reliance on coal. Workers employed by mining and energy companies can exert indirect pressure based on their preferences, e.g., through elections. (Chandler et al., 2018). Alternatively, one industry actor that plays an influential role is the miners' unions. They hold influential political power over the coal industry. Their goals are to improve working conditions, ensure high wages, and prevent layoffs. Their activities hinder the restructuring of the coal industry. Governments have closed many mines over the past 25 years, and miners' unions have never stopped protesting. In the 2000s, mine closures and employment reductions have decreased compared to the transition period. However, even in 2015, miners' unions organized an employee protest after the announcement of four mine closures.

c. Local and public actors

Environmental authorities: public authorities ensure that air protection obligations are met. Supportive measures provided by environmental authorities are the promotion of rules, monitoring of activities, and possible imposition of sanctions on violators. The

Chief Environmental Protection Inspectorate (Główny Inspektorat Ochrony Środowiska) is responsible for environmental inspections in Poland. These authorities are also required to monitor the activities of extensive industrial facilities that emit large amounts of air pollutants through inspection plans that must be public. Every inspection report conducted on industrial installations must be made available to the public (Article 23 of the Industrial Emissions Directive, 2010/75/EU). However, there seems to be a lack of structured public information on such plans and reports in Poland. (EIR 2019).

Citizens: public opinion in Poland is divided between those who want to protect the climate and those who support the coal industry. The factors influencing public opinion are mainly fears about rising energy prices, loss of jobs, and energy security. In addition, energy poverty is high in Poland. Concerns about energy security are mostly related to dependence on Russia in gas supply. (Szabo and Fabok, 2020; Szulecki, 2020; Szulecki and Kuszniir, 2018). In addition, a large portion of the population believes that job protection and economic growth are priority issues over environmental protection, despite evidence that this negatively impacts human health in the case study. However, the media discourse focuses on smog-related to local warming and mostly not on coal mining and large-scale coal plants (Osička et al., 2020). However, due to the high levels of air pollution in Poland (World Health Organization, 2016), awareness on the topic is generally high. One survey found that Polish citizens believe that a "lack of policy coherence for sustainable development in terms of air protection" is one of the most significant barriers to the use of renewable energy (Wojciechowska-Solis, 2018).

Media: the media can influence public opinion on environmental and air quality issues by disseminating information and news, inquiries, and articles. Independent media may choose to inform the public through the dissemination of findings and evidence on environmental issues. However, their influence is limited by state-controlled media that promote the strengthening of the coal industry and opposition to ambitious new environmental measures. Therefore, the voices that rise against the status quo rely only on independent media. State media in Poland reflect the thinking of key political actors (Schwartzkopff and Schulz, 2017) instead of decarbonization. Nevertheless, politicians in Poland do not often address climate change.

NGOs: the group of public actors most committed to improving air quality and against coal mining is NGOs. Several times, NGOs have filed lawsuits. However, NGOs appear to have limited power to influence policy choices or exert intense pressure on other actors. They have no political support since their environmental preferences are opposite to the preferences of key political actors. NGOs in Poland are also relatively small, and their expertise is limited. In terms of power to influence policy, NGOs are subordinate to energy companies and political actors. In general, they can influence decision-making less than pro-coal forces.

Interplay: Information and access to justice

Citizens, state authorities, and companies need to share information about the environment efficiently and effectively. In particular, citizens would be able to participate in decision-making and contribute to environmental protection if they had access to information. In Poland, the Law on Access to Information on the Environment and its Protection and Public Participation in Environmental Protection and Environmental Impact Assessments (Ustawa z dnia 3 października 2008 r. o udostępnianiu informacji o środowisku i jego ochronie, udziale społeczeństwa w ochronie środowiska oraz o ocenach oddziaływania na środowisko (Dz. U 2017 poz. 1405) regulates public participation. A 2017 survey found that according to 80% of respondents, an individual can take decisive action to protect the environment (Eurobarometer 2017). The information structure appears weak due to dispersed information and published portals, access limitations, and complicated information management. The information available to the public appears fragmented and distributed in several parts. On the contrary, constructing a single portal that brings together all environmental information would be more efficient. Instead, there are multiple information tools, each offering clarification on a single aspect. An example is the GIOS portal on air quality. In conclusion, Poland needs to make progress on systems to inform the public about environmental issues.

Citizens and NGOs have the right to go to national courts to complain about air pollution violations. They can file appeals ("legal standing") to bring lawsuits to protect the environment. This set of safeguards makes it possible to report environmental violations, expose government omissions in environmental matters, or challenge acts.

("Communication from the Commission on Access to Justice in Environmental Matters," OJ 275, 8/18/2017). Although the right is guaranteed, finding information on access to justice in environmental matters seems problematic when searching for information on the topic. For this reason, Poland should take measures to facilitate access to justice, including by publishing clear and direct information.

6. Conclusions

The purpose of this thesis was to investigate the implementation of the Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe in Poland, identifying the reasons why Poland has encountered non-compliance problems and also identifying relevant internal barriers (factors that are stabilizing the current status quo) and drivers (initial factors that are destabilizing the current status quo) for policy change.

The case-study analysis reconstructs how the Directive 2008/50/EC has been implemented to date and the consequences for Poland's positions on new EU environmental policies. The first observation is that many Member States have encountered significant problems implementing Directive 2008/50/EC. Poland failed to comply with the limit values set out in Directive 2008/50/EC and had not adopted adequate and necessary measures to contain the PM10 limit values. Moreover, Poland has wrongly transposed three articles of the Directive 2008/50/EC into its national law, as it stated the opinion expressed by the ECJ after the European Commission launched an infringement procedure for violations of the obligations contained in the Directive 2008/50/EC.

In addition the project examined which actors support compliance with the EU's most ambitious environmental goals and who benefits from opposition to environmental policies, the thesis identified the power dynamics among stakeholders in Polish environmental governance.

The theoretical justification behind the research is the relationship between EU adaptation pressures on Poland and the misfit with Poland's negotiating position in the EU that opposed massive environmental changes, the status quo of the Polish energy field, and national policies. As a result, the implementation of this Directive 2008/50/EC represents a challenge of both domestic policy and position in the European arena for Poland. Domestically, the government has made no secret of its support for the coal industry and its desire to keep the Polish energy economy anchored on the use of coal; state energy groups are intensely opposed to the ambitious environmental packages proposed by the EU; these state energy groups can influence policy and decision-making. Thus, Poland's resistance to long-term European environmental policies has been demonstrated.

Separating the social, political, and economic aspects allows us to distinguish the main influencing factors. Their preferences move partly in opposite directions in Poland:

economic and political considerations are primarily in favor of the continued use of fossil fuels even though data on air pollution show the correlation between them and causes of death. In contrast, most social considerations are an argument for implementing more ambitious environmental policies, although many segments of the population prioritize economic and employment issues over environmental ones.

The theoretical approach used aimed to consider the main aspects of multi-level governance and public policy studies. The Polish case can only be understood if the interaction between the European, national and local levels and the Polish political, energy, economic and social system's inherent characteristics are considered a whole. In particular, the multi-level perspective allows for an in-depth examination of structural changes. The public policy analysis places specific emphasis on the role of the main actors involved in the specific case and identifies stabilizing factors and those facilitating policy change.

The historical reconstruction of the Polish background allowed tracing the inherent characteristics inherited from the past applied to a political economy perspective to understand the particularities of the Polish situation still specific to the Polish case and the relevant actors influencing the sustainable energy transition.

Studies on enlargement provide insights into the Europeanisation of CEE countries, their pre-enlargement background, and European legislation adoption. The literature emphasizes primarily the fit/misfit that Poland had at the time of enlargement, considering the economic and social legacy of communism, reliance on coal, and the *acquis communautaire* to comply.

The combustion of solid fuels for domestic heating and water heating in homes causes the emission of toxic and polluting substances into the air, which is highly degrading to air quality, human health, and ecosystems. Air protection from pollutants from individual boilers is a significant challenge in Poland, especially for human health. The causes of this are mainly due to the preference for coal as the primary energy source and the use of old boilers with low efficiency. According to the European Environment Agency, about 47,500 premature deaths in Poland in 2015 were related to air pollution. Burning fossil fuels results in the emission of substances, such as particulate matter, nitrogen oxides, sulfur dioxide, carbon monoxide, and heavy metals (GUS 2015). According to the Polish

National Center for Emissions Balancing and Management (KOBIZE), coal-fired power plants are responsible for 11% of primary particulate matter (PM_{2.5}), 51% of sulfur dioxide (SO₂), and 31% of nitrogen oxides (NO_x). In addition, Poland is the largest coal producer in Europe. As a result, coal-fired power plants meet about 90% of national energy needs. The Polish coal industry employs about 100,000 people. However, domestic coal production has been directly linked to severe health problems due to air pollution and considerable deterioration in air quality in many Polish cities. (KOBIZE)

Across the EU, the annual cost of air pollution from coal-fired power plants is staggering. Each year, there are 28,600,000 cases of lower respiratory symptoms and 18,200 premature deaths associated with air pollution. In Poland in particular, a recent WHO and OECD report estimated the health costs of air pollution to be 20% of the country's GDP. As a result of high particulate matter concentrations, many Polish cities have exceeded European standards for air pollutant concentrations.

Nevertheless, the actions taken by successive Polish governments to address air pollution have been inadequate. No real improvement in air quality has occurred in recent years. Poland continues to exceed the limit values imposed by European legislation for key air pollutants. There is a need for Poland to accelerate the replacement of coal with clean energy. Polish governments continue to support and defend coal-fired power plants, even though they are no longer suitable for European energy and environmental policies and sustainable development. Changing this situation seems challenging since coal has structural power over the Polish state. The main variables that increase its power are employment, energy security, energy poverty, political influence, energy independence. Lobbying actions take place in the relationships between politics and large energy companies. The European environment is the fact that has most favored the development of effective environmental policies in Poland. Although Poland has achieved environmental results over the decades that it would never have achieved without the EU, further efforts are needed to protect the air, people, and ecosystems. In European and international negotiations, Poland has often taken a reluctant or oppositional position to change. Poland agreed with the EU to maintain its energy independence, especially from gas supplies from Russia.

On the other hand, Poland has always sought to set limit values for concentrations of air pollutants as low as possible and has opposed European attempts at bolder and more

consistent policies. It has often created partnerships with other CEE countries to assert its increasingly powerful influence on EU climate policies. Poland claimed that the resulting economic costs would be too high to justify vetoes of the EU's common energy and climate policy.

In practice, Poland mainly opposed and reluctantly accepted the climate-energy package and then absorbed it. However, the transposition and implementation of the various policies have not yet led to significant changes in policies and behavior.

In conclusion, the state-energy nexus in Poland is the most crucial determinant of policy choices and difficulties in adopting European environmental policies in Poland. The two actors influence each other, determining priorities. Poland's largest energy companies are all state treasury companies. They are all joint-stock companies whose shares are traded on the stock exchange, but the state owns the majority of their shares or legally controls them somehow. In 2018, the State Treasury owned 70.83 percent of national gas giant PGNiG and most of the shares of national oil companies. The largest utilities in the energy sector are all "state-owned companies" and together control more than 75 percent of the market. There are several complaints on these companies' status since they participate in the market as market players, but in practice, they are under the control of the government, which inevitably applies political dynamics in their management.

6.1. Future desirable policies

The analysis showed the reasons for the failure to implement Directive 2008/50/EC. In order for Poland to meet the demands of the EU but above all to mitigate its environmental impact, improve air quality and protect the health of its citizens, policy-makers can consider several actions to take in the medium term.

- First of all, it will be necessary to reduce the emissions and concentrations of particulate matter (PM2.5 and PM10) and benzo(a)pyrene more rapidly. It will require the Polish government to think about more efficient financial support programs than those already implemented. The goal is to replace as many energy-efficient domestic boilers as possible with low-emission heating systems that use renewable energy. The government needs to ensure easy access to funds and easy availability of information. Still working on domestic heating systems, other renewable sources will need to be preferred to the use of coal to limit emissions of air pollutants.
- In addition to domestic systems, the government can intervene on emissions caused by transport, responsible for high concentrations of nitrogen oxide (NOx) and nitrogen dioxide (NO2) in the air. For example, it is possible to establish access restrictions to urban vehicles, build ring roads to move traffic out of city centers, implement public transport. It should be accompanied by a system of taxation linked to emission levels such as car and fuel taxes dependent on emission levels. Poland has no CO2 or other emissions-based motor vehicle taxes (ACEA, CO2-based motor vehicle taxes in Europe). The draft law linking car taxation to CO2 emissions was suspended in 2017 (European Commission, European Semester Country Report 2018, p. 17). Poland will also need to strengthen the system of periodic car inspections, considering that new vehicles purchased in Poland are among the least environmentally friendly in the EU, with average CO2 emissions of 125.8 g/km, higher than the EU average of 118 g/km in 2016 (EEA). It could also give financial incentives to choose cars with lower CO2 emissions. In addition, it could promote the preferential use of public infrastructure
- Poland will need to ensure public information on air quality and monitoring reports, access to justice in environmental matters, and support available to

individuals and environmental groups. Online information will need to be more detailed and better structured. Reports on industrial inspections should always be available to the public.

- The Polish government will need to facilitate public participation in the implementation of EU legislation, including facilitating access to justice in environmental matters. Environmental NGOs should be empowered to initiate legal proceedings against public authorities or large corporations to challenge acts or actions.
- Poland will need to mobilize investment, including through EU funds, to reduce air pollution.

In general, Poland can further improve its overall environmental governance (such as transparency, citizen engagement, compliance and enforcement, and administrative capacity and coordination).

The analysis to date suggests that destabilizing the status quo requires that the preferences of multiple stakeholders align. In the Polish case, external pressures from the EU have the support of NGOs (whose power is limited) and part of the population. In contrast, most of the most influential Polish actors, political actors, and actors operating in the energy sector still favor continuing practices that contribute to air pollution. Theoretically, internal pressures can influence political choices. Therefore, both facilitating and hindering factors must be considered simultaneously when thinking about policy packages for implementation. Looking at the actions taken by the government, one can see that policy preferences have focused on issues such as energy security (also supported by large portions of the population). Therefore, a package of policies aimed at reducing pollutant emissions to be nimbly adoptable must also include measures with different objectives such as reducing energy poverty, employment support measures, reducing dependence on imports. Today's most pursuable path seems to be that of an energy transition towards greater risk awareness and the use of renewable sources. The phasing out of coal should coincide with the gradual introduction of renewable energies, structural policies to increase social security, and support for innovation. On the other hand, the costs of developing renewable energies are higher than conventional energy sources. It is a significant barrier to designing a more sustainable

energy strategy. In addition, it would require the redesign of much of the Polish electricity system, which has so far been based on coal-fired power generation. It would mean a massive investment stream that, to date, the Polish government is unwilling to provide. The latest European Semester national reports for Poland showed that Poland had not used environmental taxes to encourage more efficient energy use and reduce greenhouse gas emissions. The implicit tax rate on energy remains relatively low (less than 60 percent of the EU average); rates on transport fuels are lower than the EU average; and several tax exemptions are available (European Commission, European Semester Country Report 2018, p. 17). In addition, the government still gives high subsidies for fossil fuels and financial investment aid for coal mining. In the agricultural sector, there are also tax exemptions for the use of fossil fuels (EIR 2019). In this context, the EU plays a central role: investing through decarbonization-focused packages and providing support for adopting a plan for practical measures, along with the intervention of private investors, appears necessary to initiate a successful energy transition in Poland. The introduction of financial instruments to support environmental protection has the merit of providing economic support, accelerating the change process, and serving as an incentive for investors. An example of this is the "European Green Deal," which could grant Poland financial support of up to 2 billion euros. This support, however, would be contingent on the promise of carbon neutrality. Thus, the EU uses a "sticks and carrots" strategy to incentivize an energy transition in Poland. The analysis suggests that a Polish path to an energy transition will require the external pressures of EU legislation, increasing internal pressure (so far exerted mainly by NGOs), and falling renewable energy prices. The EU will need to provide Poland with (conditional) financial incentives for renewable energy installation and cohesion policies aimed at coal-intensive regions. The European goal of decarbonization by 2050 to reduce emissions in Europe will be conducted through stricter climate and environmental regulation. However, in the Polish case, the main limitation to these plans is domestic political feasibility. Indeed, a successful strategy will have to combine political, economic, and social interests and preferences and climate goals.

6.2 Example of good practice

In the 2019 EIR, the European Commission mentions an example of good practice Poland has implemented to tackle air pollution: the Małopolska region, in which heavy air pollution, has implemented the integrated LIFE Małopolska project. The project provides support for the adoption of a plan for effective air quality measures, namely "Implementation of an air quality plan for the Małopolska Region - Małopolska in a healthy atmosphere (LIFE14 IPE/PL/000021). (EIR 2019).

The project's primary purpose is to successfully implement the Małopolska Air Quality Plan (MAQP) approved by the regional Parliament in September 2013.

The region suffers from an air pollution issue arising from solid fuels in obsolete domestic boilers. The air quality plan establishes measures for the local authority to eliminate old solid fuel boilers and replace residential heating systems with natural gas, renewable energy, electric heating boilers systems that meet high-quality standards for pollutant emissions.

The project involved:

- the deployment of 60 eco-managers to assist in the enforcement of air quality actions at the municipal level,
- advisory support services to help Krakow citizens to replace solid fuel heaters and boilers
- the establishment of a regional center of expertise to provide training and build a knowledge base for local authorities and eco-managers
- Carrying out regional and local information and education campaigns.

The EH launched the LIFE program in 1992. Since then, the EU has implemented 213 projects in Poland, with an EU contribution of €114 million (European Commission, LIFE in Poland, 2017). 128 of them target nature and biodiversity, and 34 address the environment and resource efficiency. The EU granted €16 million to Polish projects in 2014-2017 (Commission services based on data provided by EASME).

7. Bibliography

- Adamczyk, Janusz, Arkadiusz Piwowski, and Maciej Dziuk. 2017. 'Air Protection Programmes in Poland in the Context of the Low Emission'. *Environmental Science and Pollution Research* 24 (19): 16316–27.
- Andonova, Liliana B. *Transnational Politics of the Environment: The European Union and Environmental Policy in Central and Eastern Europe*. Global Environmental Accord: Strategies for Sustainability and Institutional Innovation. Cambridge, Mass: MIT Press, 2004.
- Balcerowicz, Leszek. *Socialism, Capitalism, Transformation*. Budapest: Central European University Press, 1995.
- Bocquillon, Pierre, and Tomas Maltby. 'The More the Merrier? Assessing the Impact of Enlargement on EU Performance in Energy and Climate Change Policies'. *East European Politics* 33, no. 1 (2 January 2017): 88–105.
- Börzel, Tanja A., and Aron Buzogány. 'Compliance with EU Environmental Law. The Iceberg Is Melting'. *Environmental Politics* 28, no. 2 (23 February 2019): 315–41.
- Börzel, Tanja A., and Thomas Risse. 'When Europe Hits Home: Europeanization and Domestic Change'. *SSRN Electronic Journal*, 2002.
- Brauers, Hanna, and Pao-Yu Oei. 'The Political Economy of Coal in Poland: Drivers and Barriers for a Shift Away from Fossil Fuels'. *Energy Policy* 144 (September 2020): 111621.
- Child, Michael, and Christian Breyer. 'Transition and Transformation: A Review of the Concept of Change in the Progress towards Future Sustainable Energy Systems'. *Energy Policy* 107 (August 2017): 11–26.

Cole, Daniel H., "Poland's Progress: Environmental Protection in a Period of Transition" (1995). *Articles by Maurer Faculty*. Paper 2104.

'COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN ...', n.d. https://ec.europa.eu/environment/air/pdf/clean_air_for_all.pdf.

Consilium. 'Climate Change: What the EU Is Doing', n.d. <https://www.consilium.europa.eu/en/policies/climate-change/>.

Country reports - Environment - European Commission. 'Policy Findings and Country Reports', n.d. https://ec.europa.eu/environment/eir/country-reports/index_en.htm.

Elkind, Jonathan, and Damian Bednarz. 'WARSAW, BRUSSELS, AND EUROPE'S GREEN DEAL: CHALLENGES AND OPPORTUNITIES IN 2020', 2020, 26.

EUR. 'Document 32008L0050', n.d. <https://eur-lex.europa.eu/legal-content/EN/NIM/?uri=celex%3A32008L0050>.

EUR. 'Document 62016CJ0336', n.d. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A62016CJ0336>.

EUR. 'Lex - 12008E258 - EN', n.d. <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX%3A12008E258&from=EN>.

European Commission - European Commission. 'Infringement Procedure', n.d. https://ec.europa.eu/info/law/law-making-process/applying-eu-law/infringement-procedure_en.

European Commission - European Commission. 'Press Corner', n.d. https://ec.europa.eu/commission/presscorner/detail/en/IP_18_3450.

European Environment Agency. 'Air Pollution', n.d.
<https://www.eea.europa.eu/themes/air/intro>.

European Environment Agency. 'Air Pollution: How It Affects Our Health', n.d.
<https://www.eea.europa.eu/themes/air/health-impacts-of-air-pollution>.

European Environment Agency. 'Air Quality in Europe - 2020 Report', n.d.
<https://www.eea.europa.eu/publications/air-quality-in-europe-2020-report>.

European Environment Agency. 'Poland - Air Pollution Country Fact Sheet', n.d.
<https://www.eea.europa.eu/themes/air/country-fact-sheets/2020-country-fact-sheets/poland>.

'EXECUTIVE SUMMARY OF POLAND'S NATIONAL ENERGY AND CLIMATE ...',
n.d.
https://ec.europa.eu/energy/sites/ener/files/documents/pl_final_necp_summary_en.pdf.

Falkner, Gerda. 'The Europeanisation of Austria: Misfit, Adaptation and Controversies'. *SSRN Electronic Journal*, 2002.

'Giurisprudenza Straniera - Corti Supreme e Salute', n.d.
http://www.cortisupremeesalute.it/wp-content/uploads/2019/06/4_Le-politiche-europee-per-la-qualita-dell-aria-1.pdf.

Graziano, Paolo, and Maarten Peter Vink, eds. *Europeanization: New Research Agendas*. Houndmills, Basingstoke, Hampshire [England] ; New York: Palgrave Macmillan, 2007.

Gurgul, Henryk, and Łukasz Lach. 'The Role of Coal Consumption in the Economic Growth of the Polish Economy in Transition'. *Energy Policy* 39, no. 4 (April 2011): 2088–99.

Heating in Poland | 2019 edition - Forum Energii. 'Heating in Poland: 2019 Edition - Forum Energii', n.d. <https://forum-energii.eu/en/analizy/cieplownictwo-2019>.

How Large Are Global Energy Subsidies? Washington, District of Columbia: International Monetary Fund, 2015.

Jehlička, Petr, and Andrew Tickle. 'Environmental Implications of Eastern Enlargement: The End of Progressive EU Environmental Policy?' *Environmental Politics* 13, no. 1 (March 2004): 77–95.

Jordan, A. 'The Implementation of EU Environmental Policy; A Policy Problem without a Political Solution?' *Environment and Planning C: Government and Policy* 17, no. 1 (February 1999): 69–90.

Jorgensen, Erika; Kąsek, Leszek. 2011. Transition to a Low-Emissions Economy in Poland. Europe and Central Asia Knowledge Brief; Issue No. 42. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/10083> License: CC BY 3.0 IGO

Marcinkiewicz, Kamil, and Jale Tosun. 'Contesting Climate Change: Mapping the Political Debate in Poland'. *East European Politics* 31, no. 2 (3 April 2015): 187–207.

Matlak, Michał, Frank Schimmelfennig, Tomasz P Woźniakowski, European University Institute, and Robert Schuman Centre for Advanced Studies. *Europeanization Revisited: Central and Eastern Europe in the European Union.*, 2018.

Riley, Ray, and Maria Tkocz. 'Coal Mining in Upper Silesia under Communism and Capitalism'. *European Urban and Regional Studies* 5, no. 3 (July 1998): 217–35.

Sakson-Boulet, Anna. 'The Clean Air Priority Programme – Evaluation and Perspectives'. *Środkowoeuropejskie Studia Polityczne*, no. 1 (15 March 2020): 171–92.

Schimmelfennig, Frank, and Ulrich Sedelmeier, eds. *The Europeanization of Central and Eastern Europe*. Cornell Studies in Political Economy. Ithaca, NY: Cornell University Press, 2005.

- Schmidt, Vivien A, and Claudio M Radaelli. 'Policy Change and Discourse in Europe: Conceptual and Methodological Issues'. *West European Politics* 27, no. 2 (March 2004): 183–210.
- Skjærseth, Jon Birger. "Implementing EU Climate and Energy Policies in Poland: From Europeanization to Polonization?" (2014).
- Skjærseth, Jon Birger. 'Implementing EU Climate and Energy Policies in Poland: Policy Feedback and Reform'. *Environmental Politics* 27, no. 3 (4 May 2018): 498–518.
- Skjærseth, Jon Birger. 'Linking EU Climate and Energy Policies: Policy-Making, Implementation and Reform'. *International Environmental Agreements: Politics, Law and Economics* 16, no. 4 (August 2016): 509–23
- Świątkiewicz-Mośny, Maria, and Aleksandra Wagner. 'How Much Energy in Energy Policy? The Media on Energy Problems in Developing Countries (with the Example of Poland)'. *Energy Policy* 50 (November 2012): 383–90.
- Szpor, Aleksander. *Coal Transition in Poland, IDDRI and Climate Strategies*, 2017.
- Szulecka, Julia, and Kacper Szulecki. 'Analysing the Rospuda River Controversy in Poland: Rhetoric, Environmental Activism, and the Influence of the European Union'. *East European Politics* 29, no. 4 (December 2013): 397–419.
- Szulecki, Kacper. 'Poland's Renewable Energy Policy Mix: European Influence and Domestic Soap Opera'. *SSRN Electronic Journal*, 2017.
- 'The Environmental Implementation ... - European Commission', n.d.
https://ec.europa.eu/environment/eir/pdf/report_pl_en.pdf.

‘The Polish Views on Climate Policy [EN]: Pol-Int’, n.d. <https://www.pol-int.org/en/salon/polish-views-climate-policy-en>.

Todor, Arpad, and Florența Elena Helepciuc, eds. *Europeanization of Environmental Policies and Their Limitations: Capacity Building*. Cham: Springer International Publishing, 2021.

Töller, Annette Elisabeth. ‘Measuring and Comparing the Europeanization of National Legislation: A Research Note’. *JCMS: Journal of Common Market Studies* 48, no. 2 (March 2010): 417–44.

Toshkov, Dimiter D. ‘The Impact of the Eastern Enlargement on the Decision-Making Capacity of the European Union’. *Journal of European Public Policy* 24, no. 2 (4 February 2017): 177–96.

Trappmann, Vera. *Trade Unions in Poland: Current Situation, Organisation and Challenges*. Study / Friedrich-Ebert-Stiftung. Berlin: Friedrich-Ebert-Stiftung, Central and Eastern Europe, 2012.

Vasev, Nikolay. ‘Governing Energy While Neglecting Health – The Case of Poland’. *Health Policy* 121, no. 11 (November 2017): 1147–53.

Wierzbowski, Michal, Izabela Filipiak, and Wojciech Lyzwa. ‘Polish Energy Policy 2050 – An Instrument to Develop a Diversified and Sustainable Electricity Generation Mix in Coal-Based Energy System’. *Renewable and Sustainable Energy Reviews* 74 (July 2017): 51–70.

Wojciechowska-Solis, J. ‘POLISH SOCIETY IN THE LIGHT OF THE USE OF RENEWABLE ENERGY SOURCES’. *Applied Ecology and Environmental Research* 16, no. 1 (2018): 893–901.

World Bank. 2011. Transition to a Low Carbon Economy in Poland. Energy Sector Management assistance Program (ESMAP); Brief note 009/11. Washington, DC. ©

World Bank. <https://openknowledge.worldbank.org/handle/10986/17495> License: CC BY 3.0 IGO.