

Climate Obstruction in Poland

A Governmental–Industrial Complex

KACPER SZULECKI, TOMAS MALTBY,
AND JULIA SZULECKA

INTRODUCTION: ADDICTED TO COAL?

Despite the recent rapid deployment of renewable energy sources, primarily solar, Poland remains Europe's most coal-dependent economy.¹ For more than two decades, governments treated this admittedly challenging departure point as an argument for the 'unique treatment' of Poland in European and global climate protection efforts. Since the nation's accession into the European Union in 2004, consecutive Polish governments have been veto players on more ambitious climate policy initiatives and decarbonization targets.

The International Energy Agency (IEA) argues that if the world is to follow a pathway to limit global warming to 1.5°C, all members of the Organisation for Economic Cooperation and Development (OECD) need to have phased out coal by 2030.² Meanwhile, at the 2018 United Nations climate summit (COP 24) hosted by Poland, President Andrzej Duda stated that 'there is no plan today to fully give up on coal' and that Polish supplies would last 200 years.³

After Poland vetoed the European Union's 2050 net zero emissions target in 2019, European Union managed to adopt it later, with a caveat: the European Council noted that 'one Member State [Poland], at this

stage, cannot commit to implement this objective'.⁴ Poland's 2040 energy strategy, finalized in 2021, envisages electricity generation from coal in 2030 at a level higher than the European Commission's assessment of the European Union's total coal budget,⁵ with 11% of its energy still provided by coal in 2040,⁶ and coal mining phased out only by 2049.⁷ Poland is one of only two EU member states with no coal power phase-out target, while twenty-one of twenty-seven other member states have committed to phasing out coal by 2030 as part of the Powering Past Coal Alliance, a voluntary grouping of states, regions, and cities aiming to accelerate coal phaseout.⁸ The 'dirtiest' coal plant in Europe in terms of emissions is Bełchatów, in central Poland,⁹ and Poland was also the only EU member state that added new coal capacity in 2021.¹⁰

Within Polish society, there are clear signals of a change in societal attitudes toward the climate crisis, especially since 2018, when Poland hosted COP 24 in Katowice. This event coincided with the emergence of new climate protest initiatives, linked to the global Fridays for Future and 'School Strike for Climate' movement as well as Extinction Rebellion's protests. Droughts, heat waves, and Europe's poorest air quality—thirty-six of Europe's fifty most air polluted cities are located in Poland¹¹—have also contributed to raising awareness of human activity's environmental impacts. The divergence between government policy and the expectations of ambitious climate action among a growing part of society is becoming increasingly apparent.

As of 2023, Poland remains the sole EU country not committed to the net zero 2050 objective, citing 'the difficult starting point of the Polish transition and its social and economic aspects'.¹² In this chapter, we argue that Poland's insufficient climate protection efforts cannot be justified by a difficult point of departure.¹³ They are instead the result of different forms of climate obstruction, some of them strategic and intentional.

Historical emissions

The collapse of Poland's centrally planned communist economy between 1988 and 1990 resulted in many energy- and carbon-intensive industrial facilities closing, contributing to a sharp reduction in national emissions between 1987 and 1990 and a further drop between 1996 and 2002 before stabilizing for the next two decades (Figure 8.1).¹⁴ This historic change meant, however, that Poland was able to meet both European and international (i.e. the Kyoto Protocol's) reduction targets without additional effort or a conscious climate policy. When the European Union set a collective

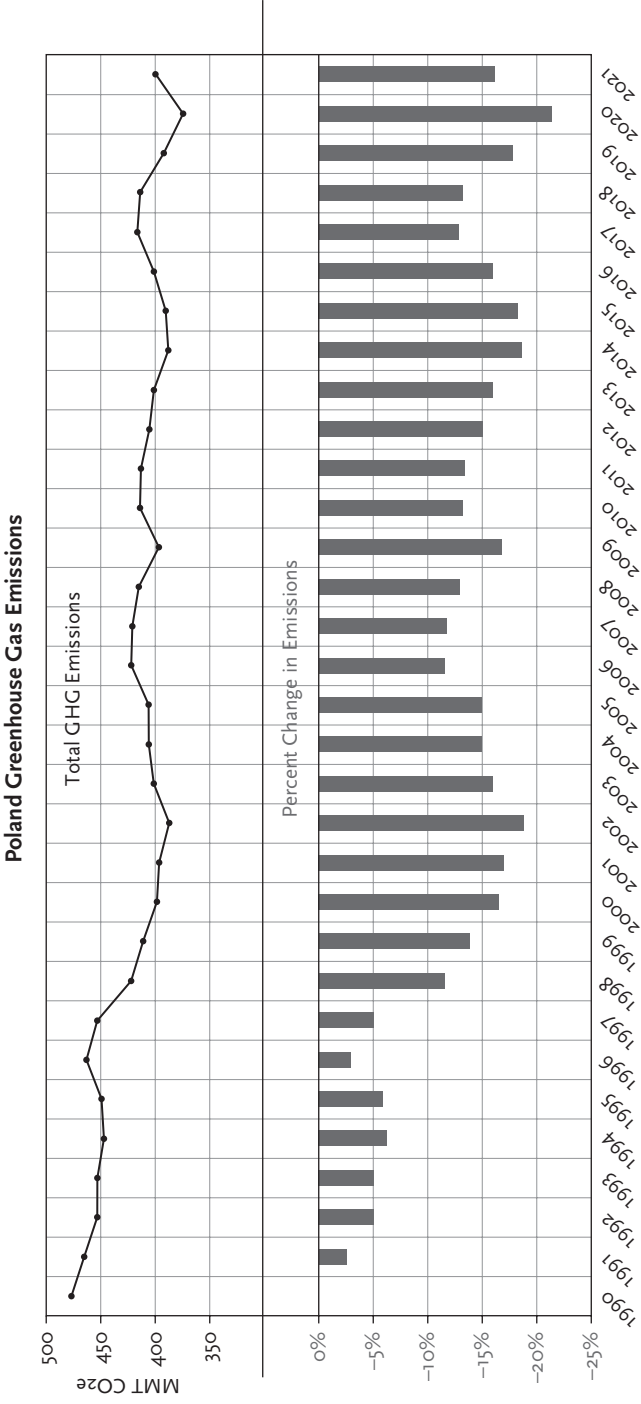


Figure 8.1 Total greenhouse gas (GHG) emissions (in MMT CO₂e) and percentage change in emissions in Poland between 1990 and 2021, inclusive. Source: Total GHG emissions based on data provided by Gütschow and Pflüger (2023) for Kyoto Six Greenhouse Gas Totals.

2020 net emissions reduction target of 20% based on a 1990 baseline and successfully achieved this goal with a 32% reduction,¹⁵ Poland decreased its emissions by 20.1%.¹⁶ It also achieved its 2020 renewable energy target of 16% (reaching 16.1%) but fell short of its energy efficiency target.¹⁷

Poland's per capita greenhouse gas (GHG) emissions peaked in 1980 at more than 500 million metric tonnes of carbon dioxide equivalents (MMT CO₂e) and were 477 MMT CO₂e in 1990.¹⁸ The country's share of global responsibility is 0.96%.¹⁹ On a pathway to limit global warming to 2°C, Poland's fair-share emissions for 2030 are a reduction from 1990 levels of 45% (to 260 MMT CO₂e), 55% for a 1.5°C scenario, or 67% (to 155 MMT CO₂e) for a 1.5°C LED scenario.²⁰ However, the European Union's collective proposed reduction of 55% by 2030²¹ is considered insufficient by Climate Action Tracker.²² Poland's goal is far less ambitious at 'approximately 30%', and far from the global or EU fair share.²³

HISTORICAL BACKGROUND: HOW POLAND BECAME COAL LAND

When Poland regained its independence after World War I, a significant part of Upper Silesia—which had become an industrial powerhouse of the German Empire thanks to large coal reserves—was awarded to the Poles, together with its mines and industrial facilities. This gave Poland indigenous coal resources, large enough to make the country energy independent, and serving as a base for industrial expansion and a profitable export industry.

Then, during the reconstruction efforts after World War II, Poland conducted a massive electrification program based mainly on hard-coal power plants. Post-war territorial changes increased indigenous coal resources considerably and by 1980, the country had become the second-largest producer of coal in Europe, after the Soviet Union. Coal mining and heavy industry were promoted by the communist authorities as the foundation of post-war prosperity, but also as a source of national and working-class pride.²⁴ As such, the notion of coal as 'black gold', Poland's invaluable treasure, and the figure of the selfless miner sacrificing himself for the benefit of society became deeply engraved in the Polish collective imagination of technological progress.²⁵ Coal is inextricably linked by politicians with Poland's role in the European Union and the world—Prime Minister Beata Szydło stated that coal was 'a synonym of development and modernity'.²⁶ This notion prevails, and the symbolic importance of coal is acknowledged even by Green Party MPs: 'We are dependent on coal. Not only

in the energy sector and in the economic sense, but also in our national mentality . . . associated with some idea of patriotism, independence, and energy security'.²⁷ Attacks on coal are cast as 'an attack on sovereignty',²⁸ particularly by the far-right political forces.²⁹

In the 1970s, the communist authorities constructed several large-scale hydropower plants and explored developing nuclear energy capacity to limit coal dependency. However, protest campaigns in the second half of the 1980s and the transition from communism to capitalism halted these plans in 1990.³⁰ Meanwhile, lignite (brown coal) was gaining prominence, and the Bełchatów plant, completed in 1988, became Europe's largest coal power plant and one of the largest in the world. As many as 388,000 people—roughly 1% of the entire population—were employed in the coal sector in 1990, when close to 100% of electricity was generated from coal.³¹

Following the political transition and in response to ecological catastrophe, to which the coal sector greatly contributed, the period 1990–1991 saw an eruption of environmental legislation in all domains, including energy.³² In 1990, an energy policy until 2010 stated that 'environmental protection should be the main factor influencing the choice of energy sources' and indicated renewables as the preferred solution.³³

By 2021, the share of electricity generated from coal was down to 72%³⁴ and the number of people directly employed in hard and brown coal mining had fallen to under 75,000,³⁵ though this still represented approximately half the coal mining jobs in the European Union.³⁶ Nineteen million people continued to use coal for winter heating, and 80% of private homes in the European Union using coal are located in Poland.³⁷ Eighty-seven percent of all coal consumed in EU homes in 2019 was in Poland, using 10 million tonnes, half mined in the country.³⁸ In 2021, Poland had thirty-four coal mines,³⁹ seventeen coal-powered plants, and more than twenty combined heat and power facilities using coal.⁴⁰ The majority of coal power plants were built between 1960 and 1980 and are nearing retirement. It is estimated that, by 2030, Poland may lose 41,000 jobs in the sector.⁴¹ Employment in, loyalty toward, and support for the sector are heightened by a social multiplier effect,⁴² and miners are highly respected in society, more so than teachers, doctors, and professors.⁴³

As a result, the dominant perception of what is in Poland's national interest is a *just transition*.⁴⁴ This is within a context in which coal miners wield significant political power (mining jobs are concentrated in the southern region of Upper Silesia—which elects 12% and 13% of seats in the lower (Sejm) and the upper (Senate) houses of parliament, respectively). The 2015–2023 government was close to the 'Solidarity' trade union,⁴⁵ and consequently, a just transition was framed as a gradual one taking place

over decades. As a civil servant in the Ministry of Climate noted, ‘We lived in a kind of illusion that our policies are generally beneficial until now. That is not true . . . [the energy transition] will take years or decades of gradual evolution’.⁴⁶ From a Polish perspective, as another senior Climate Ministry expert stated, transition is conditioned on equity: ‘[the] direction set in the climate and energy policy is quite clear—this transition should take place only if it doesn’t leave anyone behind’.⁴⁷

In June 2021, the Łódź region issued a ‘territorial just transition plan’ to end lignite mining and shut down the Bełchatów coal power plant by 2036, with support from the European Union’s Just Transition Fund. However, in 2021, 80% of the local population expressed fear of mass unemployment as a result of the closure.⁴⁸

CLIMATE OBSTRUCTION: FROM DENIALISM TO SKEPTICISM

There is a dispute on this [climate change] because there is a question mark as to the human cause of these changes—I am on the side of those who think there is a big question mark on this. . . . The claim that coal-fired power plants make the temperature warmer . . . in my opinion, there is no sufficient basis for this.⁴⁹

—Governing coalition MP, 2022

Poland has a history of climate obstruction in the European Union: along with other Central and Eastern European members, in 2009, Poland threatened to block the European Union’s 2020 Strategy for reducing GHG emissions and expanding renewables and energy efficiency.⁵⁰ In 2011, Poland vetoed the European Commission’s roadmap to (mostly) decarbonize the economy by 2050 on the grounds that the economic costs of an energy transition were too high.⁵¹ A year later, the Polish presidency of the Visegrad Group (with Czechia, Hungary, and Slovakia) authored a ‘Concept Paper on the Climate and Energy 2030 Vision’ reiterating this opposition and emphasizing the importance of analysing the ‘costs of ambitious headline targets for 2030’.⁵² In the 2015 electoral campaign, the right-populist Law and Justice (PiS) politicians proposed an ‘opt-out’ from the European Union’s climate policy and the renegotiation of the 2020 Strategy. While in power, the PiS government attempted to block the European Union’s 2030 and 2050 decarbonization plans, though ultimately unsuccessfully.⁵³

In sum, Polish authorities have opposed most calls for more ambitious climate action, including the Emissions Trading System (ETS) and binding renewable energy targets.⁵⁴ Although these EU policies were ultimately implemented, they were weakened as a result of Polish-led obstruction, as

they were in the case of the European Union's 2030 Climate and Energy Framework, negotiated in 2014, in what might be termed a 'Polonization' of EU policy in place of the 'Europeanization' of Polish ambitions.⁵⁵

Among Poland's right-wing politicians, EU climate policy is continuously criticized: as an elite 'fashion' characterized by 'hypocrisy of people who usually belong to the elite and don't give a damn about the interests of those who have to pay for it' and causing 'chaos'⁵⁶; and as 'highly ideological', a product of 'political postmodernism'.⁵⁷ The European Union's emphasis on leading by example in climate policy⁵⁸ is portrayed as 'kamikaze politics'⁵⁹ and a 'threat' to Polish national interests, as 'it has nothing to do with climate protection, but is an element of the economic policy of countries such as Germany. . . . The very model of EU transformation is unfair and pathological. And it is now bankrupt'.⁶⁰

Opposition politicians have often sided with government parties in contesting European energy and climate policy. This suggests the existence of a broad cross-party coalition that is likely to persist after changes in government.⁶¹ This consensus has been undermined by PiS's anti-EU stance and increasing political polarization, which has led to a partisan framing of climate policy: 'the opposition is against the government . . . [so] the government is not so willing to adopt climate policies'.⁶²

The attitude of political elites may have been both a reflection and a cause of broader societal disinterest in climate action, at least before 2018. The initially climate-sceptic and openly denialist attitudes that dominated in the 1990s and 2000s were epitomized by the fact that the Polish Academy of Sciences was one of the last national science institutions in the world to issue an official statement, in 2007, acknowledging the anthropogenic character of climate change.⁶³ Research by McCright and colleagues found that the salience of climate change is lower in Central and Eastern Europe than the rest of Europe, with less concern among citizens and politicians.⁶⁴ According to a 2015 Eurobarometer poll, 69% of EU citizens considered climate change to be 'a very serious problem', compared with 56% in Poland.⁶⁵ This finding supports that of Kvaløy and colleagues that, of forty-seven countries sampled, respondents in Poland were the least concerned about climate change,⁶⁶ although, by 2023, the gap between the European Union and Poland on concern about climate change had narrowed to 8%.⁶⁷ A challenge remains in that the majority of the public agree with the government's cautious approach to the pace of energy transitions: in 2023, 55% of those polled agreed that Poland should choose its own pace to achieve climate neutrality, even if that means after 2050.⁶⁸

Although earlier research emphasized 'denialism' and 'contrarianism' as a defining feature of Poland's climate debate,⁶⁹ this characterization

may be misleading, and such claims are based on a selective reading of the most extreme views and ideas present in the public debate. To do so is tempting, as many high-profile political actors in Poland have over the past decade produced many astonishing denialist statements.⁷⁰ For example, the annual ‘climate nonsense’ prize, awarded by the Climate Education Foundation, in 2014 went to Zbigniew Ziobro, the minister of justice, for saying that carbon dioxide cannot be harmful because we consume it in carbonated beverages; in 2016, the honour was given to Janusz Korwin-Mikke, an MEP who stated that most scholars say that global warming, if it exists at all, has nothing to do with human activity.

However, our own research on Polish media found that *primary obstruction*, or open climate denialism (including *trend scepticism*, questioning the existence of global warming, and *attribution scepticism*, doubting human responsibility for climate change) plays a relatively minor though not insignificant or unimportant role in the Polish debate. As an opposition MP stated, ‘Opinions that deny the scientific facts of climate change . . . are intended solely to cause controversy and unnecessary discussion on obvious phenomena’.⁷¹ Meanwhile, *secondary obstruction*, or what may also be termed *response scepticism* or *delayism*, is mainstream. Our research finds that, in the 2014–2016 period, 17% of the sampled discourse in the press and TV included representation of views that deny climate change is occurring. Furthermore, 25% of the discourse included views that accept that it is happening but deny the role of humans. When considering the COPs hosted by Poland, an analysis shows that 14% of media discourse on climate change around the event included the views that denied climate change was occurring in 2013, but this proportion had decreased significantly, to 6%, by 2018.⁷² Public-opinion polling echoes this change: in 2009, 65% of Polish citizens thought that climate change was primarily caused by human involvement (26% disagreed), but this figure gradually increased over the next decade, to 75% in 2018 (with 18% attributing it to natural causes).⁷³

The dominant feature of Polish climate debate is less clearly denialism but rather response scepticism. In August 2018, an MP and state secretary responsible for energy, Piotr Naimski, argued that ‘any binding stance that would be accepted at the conference in Paris will be harmful to Poland, so a failure of the [COP] summit is in Poland’s interest’. The Polish President, Andrzej Duda, at the same time stated that ‘Decarbonisation is completely not in our interest’. Similarly, 40% of media discourse during the Warsaw conference in 2013 was related to acknowledging the problem but considering no policy response necessary, though significantly this proportion had fallen by half, to 21% by 2018.⁷⁴

A note of optimism relates to a change in perception among politicians and civil servants in recent years, particularly after 2018: ‘For 4 years between 2015 and 2019’—an opposition MP says—‘the PiS government did not want to acknowledge that the coal age is over’.⁷⁵ However, as two civil servants from the Ministry of Climate (established in 2019, to coordinate Polish policy domestically and in the European Union and UN) noted, ‘in recent years we can witness the effects of it every summer’⁷⁶ and ‘people see it [climate change] and demand action from local authorities. . . . These matters became the subject of political debate. It has significantly changed. Our ministry has a top and priority status’.⁷⁷

Apart from the visible effects of climate change, such as droughts and heat waves, the change can be attributed to air pollution: an MP argued that ‘in terms of climate policy . . . the attitude in Poland to the fact that the coal age is history happened not because of the European Court of Justice, European politics or the Youth Climate Strikes—but because of smog’.⁷⁸ As a result, despite the rhetorical prominence of climate obstruction, ‘today there is no one in the government who would question the energy policy . . . we all know that we step away from coal’.⁷⁹ In this context, the remaining opposition to any sort of climate policy is visible on the far right, among the ultraconservative MPs from *Konfederacja* and, more importantly in *Solidarna Polska*, a junior coalition partner in the 2015–2023 government whose position on the energy transition, according to a former government minister ‘resembles the behaviour of textile workers protesting machines in the 19th century’.⁸⁰

However, there is a form of secondary climate obstruction not often discussed in the literature on climate scepticism and denial—acknowledging both the scale of the issue and the requirement to respond but locating the time to respond at some unspecified near future moment when technology permits; a future vision of ‘clean coal,’ for example—‘an attempt to make an effective argument out of something that cannot be properly argued’.⁸¹ We observed a very significant increase in the media discourse representing these views, from 23% to 44%, after the 2015 election, in which the populist Law and Justice party won. Similarly, media analysis around the two COPs in 2013 and 2018 indicated that 50% of all discussion was focused on action to be taken not now, but in the future.⁸²

KEY ACTORS IN CLIMATE OBSTRUCTION

Poland’s climate policy landscape is characterized by a large degree of segmentation—meaning that actor coalitions that dominate it are divided

and lack common discursive framings of climate policy or visions of energy transition. Among these actor coalitions, which should be understood as dynamic and related but still clearly discernible—one is dominant in terms of its agenda-setting and political power. This coalition is concentrated in governmental institutions, particularly the ministries responsible for climate and energy policy (Table 8.1), agencies, and state-owned energy companies and utilities. Together, they constitute a unique ‘governmental–industrial complex’ (GIC).⁸³ We conceptualize the GIC as a powerful *discourse coalition*, a group of actors that share common storylines, problem definitions, and preferences for certain solutions. Actors in discourse coalitions ‘try to impose their views of reality on others, sometimes through debate and persuasion’—as pro-governmental think tanks and GIC-linked media do in this case—‘but also through manipulation and the exercise of power,’⁸⁴ which is particularly important for a discourse coalition built around core state institutions and the fossil industry.

Since 2020, responsibilities for decarbonization, drafting climate policy, and steering the energy system have been divided between the Ministry of Climate and the Environment and the Ministry of State Assets. Together with the Chancery of the Prime Minister and the Government Plenipotentiary for Strategic Energy Infrastructure (a post created by the Law and Justice government), they constitute the core public actors influencing climate action. Other important public actors include the national regulator, the Office for Energy Regulation (URE), and the state-owned transmission system operator PSE. However, important voices in the debate on climate policy come from other ministries as well as the two chambers of parliament—the Sejm and the Senate.

Poland’s major energy companies are state controlled (Table 8.2); the state owns a majority of their shares or legally controls them through the Ministry of State Assets. The oil company Orlen has, since 2016, become

Table 8.1 THE POLISH MINISTRIES RESPONSIBLE FOR CLIMATE, ENERGY, AND THE ENVIRONMENT BETWEEN 1999 AND 2024, INCLUSIVE

Environment	Climate	Energy
Ministry of Environment (1999–2019)		Ministry of the Economy (2003–2015)
	Ministry of Energy (2015–2019)	
Ministry of Climate (2019–2020)		Ministry of State Assets (2019—present)
Ministry of Climate and Environment (2020—present)		

Table 8.2 OWNERSHIP OF ENERGY AND MINING COMPANIES IN POLAND

Company	State treasury shares
Petroleum and gas companies	
PKN Orlen	49.90%
PGNiG	Acquisition by Orlen
Lotos Group	Acquisition by Orlen
Electricity companies	
PGE Polska Grupa Energetyczna	60.86%
Enea	52.29%
Tauron	30.06%
Energa	0% (Orlen 90.92%)
Mining companies	
Polska Grupa Górnicza (coal)	100%
KGHM (metals)	31.80 %

Source: Authors own elaboration based on publicly available information on companies' websites in 2023.

a 'national champion' that accumulates stocks in other energy companies, expands to other European countries, and wields significant political power. State companies control more than 75% of the power market, which leads even the most moderate mainstream energy analysts to call this setup an oligopoly.⁸⁵ The state also owns 100% of the shares in the largest coal mining company, PGG.

Institutional links are only one level; the other is personal, a circulation of elites through a 'revolving door'. An example is Deputy Minister of Agriculture Janusz Kowalski, an outspoken critic of climate policy. As a civil servant explained in 2021, Kowalski's flamboyant rhetoric is not merely aimed at attracting attention: 'Kowalski's circle has a significant influence on what goes on behind the scenes. It's not just him, but it is the whole camp with some informal relationships. . . . Kowalski worked in many places, at PGNiG . . . and his connections are still there'.⁸⁶

The status of these companies is contested. Formally corporate entities listed on the stock exchange, they are under government control and often must operate according to logic contrary to shareholders' interests and economic efficiency. Since 2016, the PiS government has changed the charters of the four major (and partly state-owned) energy companies, introducing a clause saying that they constitute an 'instrument of national energy security'.⁸⁷ This change implied that they would no longer be subjected primarily to economic market logic but might be forced to act in the 'national energy security' interest, left undefined. The insistence on state

ownership and prioritizing ‘national energy security’ is consistent with an ‘energy sovereignty’ paradigm that emphasizes the national character of energy systems, energy resources, and the identities of energy companies. Renewable sources are then often framed as foreign, as one civil servant attests: ‘Several times I have participated in discussions in the Sejm or in the Senate, and I can see the attitude of deputies or senators when it comes to renewable energy. The main question is—who produces these turbines? These panels? Well, most of it is German or Scandinavian. Exactly—“so what benefit do we have from this, apart from the fact that we will have green energy?”’⁸⁸

This resource nationalism and ‘energy xenophobia’ is amplified by the right-populist government’s foreign policy rhetoric, in which energy plays an important role. A member of parliament noted that:

The political imagination of Poles is appropriated by sheer and biased propaganda . . . the enemy is the European Union, which imposes the climate package on us, the enemy is Germany, which pursues its interests. We, the only righteous ones, are surrounded by enemies. . . . Our coal should stay while the EU scandalously tries to destroy it, along with undermining our sovereignty.⁸⁹

State ownership is also the cause of opaque boundaries between public administration, politics, and the energy sector. During the transition from communism, Poland experienced only a gradual development toward a professional civil service. Most public institutions remain politicized, and each election brings significant staff changes on all levels. Calls for technocratic ‘governments of experts’ are often popular, so ministers do not have to have a parliamentary mandate (they are often not elected politicians) although it is seen as positive if they have experience in the policy arena. Hence, experience in the energy sector is seen as valuable in the ministries dealing with energy. The 2019–2021 climate minister Kurtyka was described as not having a ‘political base’, which resulted in a situation where ‘various energy companies may have a greater influence than they should have on the entire course of activities related to our energy policy’.⁹⁰ Among civil servants, a gradual energy transition is seen as necessary: ‘We, as an administration, must always counterweigh and maintain balance. Now we are at the starting point. The greater the dynamics of such a process, the greater the costs. We, therefore, need to adapt our pace of transformation to the resources we have’.⁹¹

With state companies under the control of the government, politicization extends beyond the civil service. First, while ministers and their deputies cannot sit on state company supervisory boards, directors of

ministerial departments and other civil servants can. Their formal role is to safeguard the interests of the State Treasury. However, board membership is also lucrative and is used as a premium for loyalty within ministries. Furthermore, sitting on boards is also often an anchor for future positions in the company itself.⁹²

Regarding climate obstruction, the most important outcome of the GIC's existence is energy sector incumbents' shaping of governmental policy through regulatory capture. The Climate Ministry should be the most climate-ambitious part of government on decarbonization but is 'strongly influenced by transmission and distribution network operators. They believe that renewables are a challenge, a problem'.⁹³ The result of this influence is an energy policy orientation that seeks to sustain the political economic status quo of the energy sector. Energy transition is framed as possible only to the extent that it can be achieved by the state-owned energy companies. In practice, that means delaying a coal phase-out for as long as possible and replacing coal generation with energy sources that can be controlled only by large players such as nuclear power plants (in partnership with private business) and offshore wind farms. The role of gas plants, also state owned, is as a transition fuel, with distributed renewables playing only an auxiliary role. As a deputy minister stated in 2022: 'What is the basis for energy production? In my opinion, it should be coal, not natural gas. Coal should be at the centre of the energy transformation in Poland until the construction of a nuclear power plant'.⁹⁴

There is a challenge to these positions, particularly from environmental nongovernmental organizations (NGOs) as well as think tanks that provide counterevidence and independent data and pressure the government for transparency about the data it uses and the assumptions behind its policy projects, allowing for alternative interpretations and often divergent policy conclusions regarding the viability of techno-fixes. However, to date, the GIC core sets the tone of the debate. Independent or semi-independent think tanks and organizations also exist but rely on state financing, putting them in the orbit of the GIC, and present more or less explicit climate obstructionist arguments. Following the degree of dependence from greater to lesser, they include:

- The GIG Institute and the Institute for Fuel Technology and Energy, which are overseen by the Ministry of State Assets;
- the Polish Economic Institute and the National Economic Chamber (KIG), which rely on direct funding from the state budget;
- the Centre for Climate and Energy Analyses, which is part of the governmental institution set up for reporting emissions (KOBIZE);

- the Polish Electric Energy Committee, financed by the energy sector companies, mostly state owned;
- the conservative Jagiellonian Club and Jagiellonian Institute, which, although often openly critical of the government, organize events in partnership with state energy companies;
- the independent liberal or libertarian institutes such as the Warsaw Enterprise Institute and the Forum for Civic Development (FOR), which represent business interests outside the state sector.

Although there are no Polish institutions listed among the Global Warming Sceptic Organizations, the Atlas Network, or in the DeSmog Climate Disinformation Database, these think tanks generate expertise and arguments that can be classified as secondary obstruction, discussed in the following sections.

Discursive framings: Preaching delay

I don't think there are many who genuinely believe in the climate crisis. [and] I think there are also many people who think we can't afford [an energy transition]. And that our influence—of Poland and the Polish industry—is so petty in the world that our actions will not help.⁹⁵

—Civil servant, State Forests, 2020

In the Polish climate discourse, delayism is visible in attempts to either shift responsibility onto others or, more often, to extend the timeframe of necessary action and political intervention well beyond 2050. Although Poland does not have a net zero target year and does not foresee a coal generation phase-out, much of climate obstructionist discourse is focused on the apparently unsustainable pace of the energy transition and EU climate policy. While Poland is a signatory of the Paris Agreement, such calls for a more 'realistic' and 'considerate' transition pathway continue to be visible. Meanwhile, state-controlled energy companies are torn between market realities and the EU regulatory environment in which they operate—clearly set for a decarbonized future on one hand and the unpredictable Polish regulatory environment and political pressure from the government on the other. As a result, most of them have some kind of climate strategy or sustainability policy. Tellingly, in the gas company Lotos, 'climate risks' that were defined by a special task group 'are transformation-related, not physical in character'⁹⁶ (i.e. it is fossil fuel phase-out that is the climate-associated risk, not climate change itself).

There are also visible discrepancies between what the companies, operating as corporate organizations, do and what their politically nominated managers say. For example, the largest power company, PGE, which plans to achieve carbon neutrality by 2050, was headed by Wojciech Dąbrowski who, on occasion, openly denied the impact of CO₂ on global warming and suggested that climate policy is a form of external pressure against Polish sovereignty.⁹⁷

When it was sued by Greenpeace as a climate polluter, PGE convened an expert body of scholars who issued a formal statement questioning the scientific consensus behind anthropogenic climate change.⁹⁸ Such open denialism is, as noted already, increasingly rare. All the major energy companies have refocused their investment strategies on low-carbon sources or negative emissions, even as their representatives continued to call for a more cautious or delayed decarbonization strategy. As the Orlen spokesperson, Adam Czyżewski, put it:

The energy transition is not a race, but a crossing that has to be done in a coordinated way. . . . [D]ecarbonization is also security, but the security of the future . . . the goal is to move towards climate neutrality, but to achieve this you need fossil and renewable energy sources. The transition cannot be rushed, because it is not about one country achieving its goals, but about it happening for all.⁹⁹

The Orlen CEO, Daniel Obajtek, echoed this sentiment in a 2021 speech where he said: ‘Let us not expect change to happen year-on-year or in ten years. This cannot be achieved by a rapid revolution, but perhaps a more rapid evolution’.¹⁰⁰ Czyżewski has also used arguments that push responsibility onto others, be it non-EU states or consumers. He emphasized the need for non-European countries to follow the European Union’s example, with further ambition being conditional on this joint effort. He also underlined the fact that an energy transition is ‘primarily’ a shift in consumption habits.

Other energy sector actors present similar arguments, including trade unions. A leader of All-Poland Alliance of Trade Unions (OPZZ) noted that EU climate policy ‘makes no sense in a situation where most industrialized countries like China, Russia or the US are not reducing emissions’,¹⁰¹ while, in 2019, the leader of the largest union, Solidarity, asked the Polish delegation to the European Council to negotiate ‘a change in the time horizon’ of the net zero target.¹⁰² While very different in their political position, some leading think tanks echo similar themes in their public statements. The conservative but independent Jagiellonian Club

suggested in 2022 that ‘Poland should tame the ambitions of the Union. We should tone down the goals of the European Green Deal’.¹⁰³ The National Economic Chamber, which before 2013 voiced openly climate-skeptical views, has since switched positions, proposing to increase Poland’s ambitions well beyond the government’s energy strategy. And yet, in November 2022, the Chamber organized an event entitled ‘With coal—safely towards green transition’ at which experts argued for the need to revise the speed of EU climate policy and called for reflection on its direction.¹⁰⁴

A further justification for delay amongst GIC actors is the effect of decarbonizing on and society’s responsibility for its citizens and workers. This emphasis on a ‘just transition’, which is primarily an argument for delay and not for a more socially transformative process, is visible among trade unionists, politicians, and energy company experts alike: ‘Environmentalism—yes; climate—yes; but jobs and livelihoods are most important’, said an OPZZ official during the 2013 COP 19 in Warsaw.¹⁰⁵

Much more subtle forms of climate obstruction can be observed in the think tank sector, where most experts question neither the overall climate protection goals nor EU climate policy but contribute to the daunting picture of the impossibility of transforming Poland’s energy sector in time. In February 2020, the Warsaw Enterprise Institute organized two events criticizing the government for blocking the expansion of onshore wind, which it deemed the cheapest and quickest tool of decarbonization, but still suggested that phasing out coal ‘is not possible before 2040, and perhaps even 2050 even if nuclear enters the mix’.¹⁰⁶ A 2020 Polish Economic Institute study concluded that Poland could become climate neutral by 2056, according to an optimistic scenario, while it might take until 2067 under other assumptions.¹⁰⁷ However, the consulting firm McKinsey has presented a cost-effective pathway for Poland to achieve climate neutrality by 2050.¹⁰⁸

In the expert community, this sort of soft ‘impossibilism’—portraying ambitious climate action as beyond reach and futile—is often presented as realism, contrasted with ‘irrational’ and ideologically or faith-driven environmentalism. That kind of dichotomy is particularly clear in the GIC and its expert network efforts to promote nuclear energy as central to Poland’s decarbonization, in contrast to renewable energy, which is seen as disruptive for the market and the sector and ultimately unreliable. In a recent vote on the revised EU Renewable Energy Directive, Poland was one of the two members voting against, stating that renewables ‘jeopardise both the stability of the grid and overall energy security’.¹⁰⁹

STRATEGIES AND TACTICS OF OBSTRUCTION: TECHNO-FIXER AT HOME, IMPOSTER ABROAD

In Poland, calls for delay can be discursively grounded in references to national security,¹¹⁰ but may even be disguised as ambitious climate policies that focus on a specific and narrow area of climate action or a promising future technology (a ‘silver bullet’). They may also be seen in attempts at attracting attention in global climate negotiations and presenting the country as a global climate action leader, all while drawing attention away from the more demanding problem of economy-wide decarbonization.

Techno-fixes as tools of obstruction

Future visions can play the role of a tool of social control through the process of rational planning (which presents the way to desirable and expected outcomes) but also by exporting the problems beyond the ‘here and now’ reality: we will be able to solve the problem of the tension between our coal-based economy and climate change in the near future, thanks to technology development—‘clean coal technology’.¹¹¹ Related research has argued that ‘believing that science will solve environmental problems tends to be associated with lower environmental concern’, so such ‘future vision skepticism’ is significantly correlated with lower climate ambition.¹¹²

Poland’s decarbonization strategy, as presented in the most recent official documents, will require a technology mix including elements that are not yet commercialized or are even still merely hypothetical. A 2021 roadmap presented by the Centre for Climate and Energy Analyses included large-scale implementation of carbon capture, utilization, and storage (CCUS) combined with bioenergy, industrial electrification, hydrogen use, electric vehicles, and structural changes in agriculture as prerequisites for Poland to achieve climate neutrality by 2050,¹¹³ in addition to a vast expansion of renewables, batteries, grids, and possibly also nuclear energy.

For many years, however, key actors in Polish climate politics pointed to specific ‘silver bullet’ technologies as answers to the challenge of climate mitigation or, more often, referred to them as preferred solutions for the future, justifying limited or no action in the present. As noted earlier, the first of such technologies have been ‘clean coal’ technologies, to be developed by domestic R&D and allowing Poland to maintain a coal sector in an energy transition. In 2013, Poland’s GIG Research Institute opened a Centre for Clean Coal Technologies, which received large grants from the state budget and EU funds. What these technologies might be in practice

remained unclear, but they are still referenced by some GIC actors as an argument against EU climate policy and coal phase-out. In 2021, a Solidarity trade union leader from the mining company PGG complained that ‘nobody thinks how beneficial it would be for Poland to invest in low and “zero emission” sources of energy from coal’.¹¹⁴ The head of the Jagiellonian Institute summarized such remarks as ‘incantations, meant to work only on the domestic forum’ as ‘today there is not and will never be a debate on clean coal technologies, dismantling the ETS’, and underlined that Poland ‘lost lots of time on such empty gestures’.¹¹⁵

Due to its carbon-intensive energy generation, Poland was one of the early leaders of CCUS development, and the first pilot projects were already planned under the Civic Platform government of 2007–2011. Little progress has been made since, though state-controlled energy companies (Lotos, Enea, and Tauron) mention CCUS projects in their strategies. Many modelled pathways toward net zero rely on large-scale CCUS deployment, which remains hypothetical—a problem not unique to Poland.

The Polish government’s contribution to the project of carbon removal is establishing carbon forestry as a flagship climate policy. In 2016, State Forests, a state-owned enterprise governing all publicly owned forests, presented the elaborate Forest Carbon Farms project with the intention of turning industrial timber plantations into carbon sinks. That same year, at COP 22 in Marrakesh, the Polish delegation promoted the idea together with the concept of a ‘waste-free coal power industry’.¹¹⁶ The environment minister, Jan Szyszko, is often dubbed the project’s ‘godfather’.¹¹⁷ Forest Carbon Farms were officially established by ordinance in 2017,¹¹⁸ and state energy companies were encouraged to buy carbon credits from the Carbon Farms program. This policy contradicted domestic academic expertise suggesting that ‘climate change mitigation through carbon sequestration in forests may adversely affect available water resources in Poland, due to high evapotranspiration of forests’.¹¹⁹ Nevertheless, government-controlled and pro-government media vigorously promoted the idea and portrayed it as Poland’s unique contribution to global climate action and as a solution that would allow the country to maintain its coal sector while also meeting international obligations. However, after Szyszko’s death in 2019, the idea of carbon forestry quickly lost prominence, and, in 2023, only the energy company Tauron mentioned it as part of its climate policy.

Lately, the most prominent ‘silver bullet’ technology promoted in Poland is nuclear energy. According to the government as well as many mainstream GIC-linked experts, large nuclear power plants are the only realistic way to decarbonize the power sector. The ‘Polish Energy Policy by 2040’ strategy envisages as much as 9,000 megawatts (MW) of nuclear capacity by the

mid-2040s, making the Polish national megaproject one of the most ambitious globally. However, it will only meet 20–25% of the energy demand, and, if it replaces coal as late as the 2040s, the cumulative emissions from the Polish power sector will have far exceeded the country's carbon budget.

Nuclear's role as an element of obstruction lies in the fact that while it is in theory compatible with renewables, it has gained a larger share of media and industry attention, whereas insufficient and slow deployment of renewables has not been addressed. The director of the Polish Economic Institute laid out the self-contradictory official line, saying that nuclear 'supported by RES', or renewable energy sources, is necessary to maintain energy security, even though most models, including the government's own, see the roles of renewables and nuclear in reverse order. The Law and Justice government has underestimated the growth of distributed renewables and undermined their further expansion—particularly by introducing a very restrictive siting policy for onshore wind that has effectively banned it, limiting it to 0.28% of Poland's land area,¹²⁰ and by failing to initiate grid expansion enabling more renewables deployment. Although all energy companies are making plans to expand their renewables capacity, in the case of several of them this has meant buying up existing wind farms from smaller players or investing in offshore projects to be completed in the 2030s. In this case, the state power companies, although all are strongly in favour of onshore wind, were not able to influence lawmakers; political opposition against wind farms, particularly from the far-right junior party *Solidarna Polska*, eventually weakened a 2023 amendment of the siting law.

Meanwhile, virtually all Polish energy companies now boast nuclear ambitions. PGE is charged with building the first Polish nuclear power plant and supervising the national, large-scale nuclear projects, which remain the only ones that have secured state financing, although its conditions are not yet set. Orlen, in 2023, announced plans to construct as many as seventy-six small modular reactors (SMRs) in twenty-six localities, adding up to 22,000 megawatts (more than double the government's plan for the mid-2040s), with the first envisaged to come online in 2028. So far, however, not a single reactor made by Orlen's American partner has been built. Enea and Tauron are also planning SMR construction. A nuclear sector analyst counted 126 announced nuclear reactors of different types and sizes planned for Poland, all of which should be operational by 2043 (if plans are realized).¹²¹ Independent experts, even those favouring nuclear energy, have been highly sceptical, as is one of the ruling party MPs: 'It cannot be said in 2021 that we will indicate the location by 2022 or 2023, and then within 10 years, we will build a nuclear power plant. This is unreal. We see it after Flamanville [France] or Olkiluoto [Finland]—it is unreal'.¹²²

Climate imposter: Poland's international climate diplomacy

Despite its clear denialist tendencies in the public climate debate, Poland has been surprisingly active in the United Nations Framework Convention on Climate Change (UNFCCC) process. There are two reasons for this. The first was economic: the post-communist economic crisis and restructuring led to significant declines in emissions, and Poland was able to decouple emissions from economic growth; between 1988 and 2016, its gross domestic product (GDP) more than doubled, while GHG emissions had fallen by more than 30% by 2002.¹²³ The Kyoto Protocol 'was perceived [by politicians] as a good opportunity for Poland to capitalize' on this record.¹²⁴ The second reason was agenda-setting power: governments in Warsaw have been broadly engaged in UNFCCC negotiations. Jan Szyszko, the late three-time environment minister, was elected president of the COP 5 in Bonn (1999), leading intersessional talks for a year,¹²⁵ while Poland hosted three summits: in Poznan (2008), Warsaw (2013), and Katowice (2018) using regional-rotation rules to shape the character of negotiations.¹²⁶ National energy companies were sponsors of these summits, and Polish governments framed their proposals as a rational alternative to 'ideologically driven' climate action.¹²⁷ At the 2018 COP, Poland proposed the Silesia Declaration on a 'just transition', a call for a cautious pace to mitigate social and economic costs,¹²⁸ and Just Transition is the first of three pillars of the 2040 Polish energy strategy.¹²⁹ This approach led one government representative to argue that Polish views were 'always a part of the mainstream in the matters of global policies . . . in international UNFCCC negotiations our approach is much more similar to others'.¹³⁰

CONCLUSION: PHASING OUT, PHASING DOWN, OR CLINGING ON?

The challenge Poland faces in phasing out coal, on which it is highly reliant, is real. However, it is also a situation that some other European countries have faced previously. This point of departure, often used to justify delaying climate action, is not a sufficient excuse. It also does not explain the character of Poland's climate policy debate. The apparent degree of climate obstruction has instead been created and perpetuated by a dominant coalition of governmental institutions, agencies, and state-owned energy companies and utilities that constitute a GIC, surrounded by think tank experts and journalists who are dependent on state and energy company financing and thus promote the GIC arguments. While there has been a

shift in discourse and policy emanating from the GIC, it continues to promote obstructionist strategies and offers ‘silver bullets’ in the form of promising future technologies such as ‘clean’ coal and unrealistic plans for new nuclear power plants. This pattern is underpinned by Poland’s stated commitment to a just (and gradual) energy transition, which, rather than illustrating concern for the vulnerable citizens left behind, is one more of the GICs ‘climate imposter’ tactics.

Further research is needed to examine whether societal changes, including the effects of COVID since 2020 and Russia’s full-scale invasion of Ukraine in 2022, are leading to a more substantive engagement for a more progressive and ambitious Polish climate policy. The 2023 parliamentary elections, which resulted in a change in government, and a planned revision of the 2040 energy strategy will provide some evidence here, but the political economy of the energy sector, with the close and often obscured connections between governmental bodies and energy companies, is likely to remain in place.

NOTES

1. Eurostat, Production of electricity and derived heat by type of fuel, 2023, https://ec.europa.eu/eurostat/databrowser/view/NRG_BAL_PEH__custom_7652146/default/table?lang=en
2. International Energy Agency, ‘Net Zero by 2050’, https://iea.blob.core.windows.net/assets/7ebafc81-74ed-412b-9c60-5cc32c8396e4/NetZeroBy2050-ARoadmapfortheGlobalEnergySector-SummaryforPolicyMakers_CORR.pdf. Accessed 26 July 2023.
3. Christian Davies (2019, 26 September), ‘Fight the Power: Why Climate Activists Are Suing Europe’s Biggest Coal Plant’, *The Guardian*, sec. Environment, <https://www.theguardian.com/environment/2019/sep/26/fight-power-climate-activists-europe-biggest-coal-poland-bechatow>.
4. European Council (2019, 12 December), ‘European Council Meeting Conclusions’, p. 2, <https://www.consilium.europa.eu/media/41768/12-euco-final-conclusions-en.pdf>.
5. Małgorzata Kasprzak (2021, 15 March), ‘Disappointing lack of ambition in PEP 2040’, *Ember*, <https://ember-climate.org/insights/commentary/disappointing-lack-of-ambition-in-polands-energy-policy-until-2040/>
6. DW (2021, 28 April), ‘Poland Clinches Deal to Phase out Coal by 2049’, <https://www.dw.com/en/poland-clinches-historic-deal-to-phase-out-coal-by-2049/a-57367983>.
7. Climate Action Tracker, ‘Policies & Action’, <https://climateactiontracker.org/countries/eu/policies-action/>. Accessed 26 July 2023.
8. Powering Past Coal Alliance, ‘Our Members’, <https://poweringpastcoal.org/members/>. Accessed 26 July 2023.

9. Felix Reitz (2020, 24, June), 'European Coal in Structural Decline', Europe Beyond Coal, <https://beyond-coal.eu/2020/06/24/european-coal-in-structural-decline/>.
10. Climate Action Tracker, 'Policies & Action', <https://climateactiontracker.org/countries/eu/policies-action/>. Accessed 26 July 2023.
11. World Bank (2019), 'Air Quality in Poland: What Are the Issues and What Can be Done?', <https://documents.worldbank.org/pt/publication/documents-reports/documentdetail/426051575639438457/air-quality-in-poland-what-are-the-issues-and-what-can-be-done>.
12. Polish Government Ministry of Climate and Environment (2021), 'Energy Policy of Poland until 2040', <https://www.gov.pl/attachment/a1e42067-c749-4dbe-82bf-211d46821d9d.p.4>.
13. We draw on the following sources and types of data: (1) existing scholarly and grey literature on Polish climate policy; (2) a focused document and media analysis, informed by input received from an email survey of several climate and environmental NGOs; (3) unpublished data gathered within the project 'Anatomy of Disbelief', which explored Polish climate scepticism. These include the results of a quantitative media analysis and broad content analysis of mainstream media around four politically important periods: the time around the 2013 and 2018 COP summits organized in Poland, as well as the pre- and post-2015 national election period; and (4) fifteen semi-structured interviews with Polish politicians and civil servants, conducted between 2019 and 2022, within the aforementioned project by Jakub Bodziony.
14. Hannah Ritchie and Max Roser (2020, 11 May), 'Poland: CO₂ and Greenhouse Gas Emissions', Our World in Data, <https://ourworldindata.org/co2/country/poland>.
15. European Environment Agency (2022), 'Trends and Projections in Europe 2022', EEA Report No 10/2022, https://www.eea.europa.eu/publications/trends-and-projections-in-europe-2022/at_download/file
16. Eurostat, 'Net Greenhouse Gas Emissions', https://ec.europa.eu/eurostat/data/browser/view/sdg_13_10/default/table?lang=en Accessed 26 July 2023.
17. European Environment Agency, 'Trends and Projections in Europe 2022'.
18. Instytut Ochrony Środowiska (2019), 'Krótka Historia Działań i Wyzwania Na Rzecz Ochrony Klimatu w Polsce 1988–2018–2050'. Warsaw: Instytut Ochrony Środowiska—Państwowy Instytut Badawczy, https://ios.edu.pl/wp-content/uploads/2019/03/Kr%C3%B3tka-historia-dzia%C5%82a%C5%84-i-wyzwania-na-rzecz-ochrony-klimatu-w-Polsce_PL.pdf.
19. Climate Equity, 'Climate Equity Reference Calculator', <https://calculator.climateequityreference.org/>. Accessed 26 July 2023.
20. Ibid.
21. European Parliament and Council (2021, 30 June), 'Regulations', <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R1119&from=EN>
22. Climate Action Tracker, 'Policies & Action', <https://climateactiontracker.org/countries/eu/policies-action/>. Accessed 26 July 2023.
23. Polish Government Ministry of Climate and Environment, 'Energy Policy of Poland until 2040'.
24. Magdalena Kuchler and Gavin Bridge (2018), 'Down the Black Hole: Sustaining National Socio-Technical Imaginaries of Coal in Poland', *Energy Research & Social Science*, 41: 136–147, <https://doi.org/10.1016/j.erss.2018.04.014>.

25. Ibid.
26. Ibid.
27. Interview 4, MP, 20 June 2020. All interview transcripts on file with the authors. Please see note 13 for an overview of data sources.
28. Interview 8, MP, 21 June 2021.
29. Piotr Zuk and Kacper Szulecki (2020, August), 'Unpacking the Right-Populist Threat to Climate Action: Poland's pro-Governmental Media on Energy Transition and Climate Change', *Energy Research & Social Science*, 66: 101485, <https://doi.org/10.1016/j.erss.2020.101485>.
30. Kacper Szulecki, Janusz Waluszko, and Tomasz Borewicz (2022), *The Chernobyl Effect: Antinuclear Protests and the Molding of Polish Democracy, 1986–1990*, Protest, Culture & Society, vol. 32. New York: Berghahn Books.
31. Hanna Brauers and Pao-Yu Oei (2020), 'The Political Economy of Coal in Poland: Drivers and Barriers for a Shift Away from Fossil Fuels', *Energy Policy* 144: 111621, <https://doi.org/10.1016/j.enpol.2020.111621>.
32. Julia Szulecka and Kacper Szulecki (2022), 'Between Domestic Politics and Ecological Crises: (De)Legitimization of Polish Environmentalism', *Environmental Politics* 31, 7: 1214–1243, <https://doi.org/10.1080/09644016.2019.1674541>; Julia Szulecka and Kacper Szulecki (2017), 'Polish Environmental Movement 1980–2017: (De)Legitimization, Politics & Ecological Crises', ESPri Working Paper, <http://dx.doi.org/10.2139/ssrn.3075126>.
33. Monitor Polski, 'Uchwała Sejmu Rzeczypospolitej Polskiej z dnia 9 listopada 1990 r. w sprawie założeń polityki energetycznej Polski do 2010 r.', <https://isap.sejm.gov.pl/isap.nsf/download.xsp/WMP19900430332/O/M19900332.pdf>. Accessed 26 July 2023.
34. US Government (2022, 22 July), 'Poland—Country Commercial Guide: Energy Sector', <https://www.trade.gov/country-commercial-guides/poland-energy-sector>.
35. Agencja Rozwoju Przemysłu S.A. Oddział Katowice, 'Wyniki techniczno-ekonomiczne działalności oraz inwestycje w górnictwie węgla kamiennego w Polsce w okresie styczeń–wrzesień 2022 r.' https://www.wug.gov.pl/bhp/nadzorowane_zaklady.
36. European Commission (2018), 'EU Coal Regions: Opportunities and Challenges Ahead', p. 21, <https://publications.jrc.ec.europa.eu/repository/handle/JRC112593>.
37. Maciek Nabrdalik and Marc Santora (2018, 22 April), 'Smothered by Smog, Polish Cities Rank Among Europe's Dirtiest', *The New York Times*, sec. World, <https://www.nytimes.com/2018/04/22/world/europe/poland-pollution.html>.
38. Jo Harper (2022, 27 April), 'Warsaw and Budapest Split over Russian Energy Ties', *Deutsche Welle*, <https://www.dw.com/en/warsaw-and-budapest-split-over-russian-energy-ties/a-61595947>.
39. Agencja Rozwoju Przemysłu S.A. Oddział Katowice, 'Wyniki techniczno-ekonomiczne'.
40. Paweł Madejski, 'Elektrownie w Polsce', <http://galaxy.agh.edu.pl/~madejski/elektrownie-w-polsce/>. Accessed 26 July 2023.
41. European Commission, 'EU Coal Regions'.
42. Dana R. Fisher (2006), 'Bringing the Material Back in: Understanding the U.S. Position on Climate Change', *Sociological Forum*, 21, 3: 467–494, <https://www.jstor.org/stable/4540952>.

43. Sucha24 (2016, 24 November), 'Ranking of the Most Respected Professions: First Place for a Firefighter, Surprising Profession at the End of the Ranking', <https://sucha24.pl/wydarzenia/item/5684-ranking-najbardziej-szanowanych-zawodow-pierwsze-miejsce-dla-strazaka-dziwi-zawod-plasujacy-sie-w-koncowce-rankingu>
44. Serwis Rzeczypospolitej Polskiej, 'Uchwała w sprawie „Polityki energetycznej Polski do 2040 r.”', <https://www.gov.pl/web/polski-atom/uchwala-w-sprawie-polityki-energetycznej-polski-do-2040->
45. Interview 13, MP, 7 July 2022.
46. Interview 3, Civil Servant, 3 June 2020.
47. Interview 6, Civil Servant 16 January 2021.
48. Money.pl (2021, 15 December), 'W 2036 r. chcą zamknąć Elektrownię Bełchatów. Mieszkańcy już dziś mówią o wzroście bezrobocia w regionie', www.money.pl, 15 December 2021, <https://www.money.pl/gospodarka/w-2036-r-chca-zamknac-elektrownie-belchatow-mieszkancy-juz-dzis-mowia-o-wzroscie-bezrobocia-w-regionie>
49. Interview 15, MP, 19 August 2022.
50. Pierre Bocquillon and Tomas Maltby (2017), 'The More the Merrier? Assessing the Impact of Enlargement on EU Performance in Energy and Climate Change Policies', *East European Politics*, 33, 1: 88–105, <https://doi.org/10.1080/21599165.2017.1279605>.
51. Arthur Neslen and Frédéric Simon (2012, 8 March), 'Poland Defies Europe over 2050 Low-Carbon Roadmap', www.euractiv.com, <https://www.euractiv.com/section/development-policy/news/poland-defies-europe-over-2050-low-carbon-roadmap/>.
52. Henryka Mościcka-Dendys, et al. (2013), *Report of the Polish Presidency of the Visegrad Group. July 2012–June 2013*. Warsaw: Polish Ministry of Foreign Affairs, p. 44.
53. Andrzej Ancygier and Kacper Szulecki (2015, 30 October), 'New Polish Government's Energy Policy: More State Control', *Energy Post*, <https://energypost.eu/new-polish-governments-energy-policy-expect-state-less-market/>.
54. Jon Birger Skjærseth (2018), 'Implementing EU Climate and Energy Policies in Poland: Policy Feedback and Reform', *Environmental Politics*, 27, 3: 498–518, <https://doi.org/10.1080/09644016.2018.1429046>; Tomas Maltby and Pierre Bocquillon (2020), 'EU Energy Policy Integration as Embedded Intergovernmentalism: The Case of Energy Union Governance', *Journal of European Integration*, 42, 1: 39–57.
55. Jon Birger Skjærseth (2014), 'Implementing EU Climate and Energy Policies in Poland: From Europeanization to Polonization?' Fridtjof Nansen's Institut, <https://www.fni.no/publications/implementing-eu-climate-and-energy-policies-in-poland-from-europeanization-to-polonization>.
56. Interview 12, MP, 17 May 2022.
57. Interview 13, MP, 7 July 2022.
58. Tim Rayner, Kacper Szulecki, Andrew J. Jordan, and Sebastian Oberthür (2023), 'The Global Importance of EU Climate Policy: An Introduction'. In: Tim Rayner, Kacper Szulecki, Andrew J. Jordan, and Sebastian Oberthür (eds.), *Handbook on European Union Climate Change Policy and Politics*, pp. 1–21. Cheltenham, UK: Edward Elgar, <https://doi.org/10.4337/9781789906981.00011>
59. Interview 14, MP, 12 August 2022.

60. Interview 15, MP, 19 August 2022.
61. Kamil Marcinkiewicz and Jale Tosun (2015), 'Contesting Climate Change: Mapping the Political Debate in Poland', *East European Politics*, 31, 2: 187–207, <https://doi.org/10.1080/21599165.2015.1022648>; Aron Buzogány and Stefan Četković (2021), 'Fractionalized but Ambitious? Voting on Energy and Climate Policy in the European Parliament', *Journal of European Public Policy*, 28, 7: 1038–1056, <https://doi.org/10.1080/13501763.2021.1918220>.
62. Interview 2, Civil Servant, 15 July 2020.
63. Zbigniew W. Kundzewicz, James Painter, and Witold J. Kundzewicz (2019), 'Climate Change in the Media: Poland's Exceptionalism', *Environmental Communication*, 13: 366–380, <https://www.tandfonline.com/doi/abs/10.1080/17524032.2017.1394890>.
64. Aaron M. McCright, Riley E. Dunlap, and Sandra T. Marquart-Pyatt (2016), 'Political Ideology and Views about Climate Change in the European Union', *Environmental Politics*, 25, 2: 338–358, <https://doi.org/10.1080/09644016.2015.1090371>.
65. European Commission (2015, November), 'Special Eurobarometer 435, Climate Change', <https://europa.eu/eurobarometer/surveys/detail/2060>.
66. Berit Kvaløy, Henning Finseraas, and Ola Listhaug (2012), 'The Publics' Concern for Global Warming: A Cross-National Study of 47 Countries', *Journal of Peace Research*, 49, 1: 11–22, <https://doi.org/10.1177/0022343311425841>.
67. European Commission (2023, July), 'Special Eurobarometer 538, Climate Change', <https://europa.eu/eurobarometer/surveys/detail/2954>.
68. CBOS (2023, March), 'Attitudes Towards Green Transformation', https://www.cbos.pl/SPISKOM.POL/2023/K_030_23.PDF
69. Andrzej Ceglarczyk, Rasmus E. Benestad, and Zbigniew W. Kundzewicz (2018), 'Inconvenience versus Rationality: Reflections on Different Faces of Climate Contrarianism in Poland and Norway', *Weather, Climate, and Society*, 10, 4: 821–836, <https://doi.org/10.1175/WCAS-D-17-0120.1>.
70. Piotr Zuk and Kacper Szulecki (2020), 'Unpacking the Right-Populist Threat to Climate Action: Poland's pro-Governmental Media on Energy Transition and Climate Change', *Energy Research & Social Science*, 66: 101485, <https://doi.org/10.1016/j.erss.2020.101485>.
71. Interview 1, MP, 20 December 2019.
72. Research conducted as part of the project Anatomy of Disbelief, with data gathering conducted by Wit Hubert and Grzegorz Bryda and overseen by Aleksandra Wagner. We analysed press and TV media coverage on climate change issues. The corpus included the fifteen most influential press titles in Poland and seven main TV stations. Dailies: *Rzeczpospolita*, *Gazeta Wyborcza*, *Polska the Times*, *Gazeta Polska*, *Nasz Dziennik*; tabloids: *Fakt*, *Super Express*; weeklies: *Newweek*, *Polityka*, *Gość Niedzielny*, *Do Rzeczy*, *W Sieci*, *Wprost*, *Uważam Rze*; television: TV-TVP1, TVP2, TVP info, TVN, TVN24, TV Trwam, Polsat. Articles and programmes were chosen on the basis of the following keywords: 'greenhouse effect', 'global warming', 'climate change', 'climate change policy'; in chosen periods (COP 2013, COP 2018) these keywords figured at least once in 1,254 items (analytical record), 532 of them were press articles and 772 were TV programmes. Statements were categorised into (A) Climate Delay, (B) Climate Action, (C) Passive Climate Denial, (D) Overt and Active Climate Denial.

73. CBOS (2018, November), 'Polacy wobec zmian klimatu', https://www.cbos.pl/SPISKOM.POL/2018/K_158_18.PDF, p. 6
74. Anatomy of Disbelief project data.
75. Interview 8, MP, 21 June 2021.
76. Interview 11, Civil Servant, 21 December 2021.
77. Interview 6, Civil Servant, 16 February 2021.
78. Interview 10, MP, 24 June 2021.
79. Ibid.
80. Ibid.
81. Interview 2, Civil Servant, 15 May 2020.
82. Anatomy of Disbelief project data.
83. Kacper Szulecki (2018), 'The Revolving Door between Politics and Dirty Energy in Poland: A Governmental-Industrial Complex'. In: Pam B. Quintanilla and Patrick Cummins-Tripodi (eds.), *Revolving Doors and the Fossil Fuel Industry: Time to Tackle Conflicts of Interest in Climate Policy-Making*, pp. 98–106. Brussels: Greens/EFA.
84. Maarten Hajer (1993), 'Discourse Coalitions and the Institutionalization of Practice: The Case of Acid Rain in Great Britain'. In: Frank Fischer and John Forester (eds.), *The Argumentative Turn in Policy Analysis and Planning*, pp. 43–76, at 45. Durham, NC: Duke University Press.
85. WNP (2017, 5 October), 'Krajowy rynek energii zamieniony w oligopol?', http://energetyka.wnp.pl/krajowy-rynek-energii-zamieniony-w-oligopol,307737_1_0_0.html.
86. Interview 7, Civil Servant, 16 February 2021.
87. Kacper Szulecki (2020), 'Securitization and State Encroachment on the Energy Sector: Politics of Exception in Poland's Energy Governance', *Energy Policy*, 136: 111066, <https://doi.org/10.1016/j.enpol.2019.111066>.
88. Interview 7, Civil Servant, 16 February 2021.
89. Interview 8, MP, 21 June 2021.
90. Interview 7, Civil Servant, 16 February 2021.
91. Interview 6, Civil Servant, 1 February 2021.
92. Szulecki, 'The Revolving Door', pp. 98–106.
93. Interview 7, Civil Servant, 16 February 2021.
94. Interview 15, MP, 19 August 2022.
95. Interview 2, Civil Servant, 15 May 2020.
96. Lotos, 'Sokoły z Gdańska: Ograniczający swój wpływ', https://odpowiedzialny.lotos.pl/268/sokoly_z_gdanska/ograniczajacy_swoj_wplyw. Accessed 26 July 2023.
97. Interia Zielona (2021, 6 October), 'Kongres 590: "Interesy stojące za unijną polityką ws. klimatu wymierzone w polską suwerenność"', <https://zielona.interia.pl/polityka-klimatyczna/news-kongres-590-interesy-stojace-za-unijna-polityka-ws-klimatu-w,nId,5565251>.
98. Nauka O Klimacie (2020, 28 December), 'Górnicy eksperci PGE GiEK negocjują zmianę klimatu', <https://naukaoklimacie.pl/aktualnosci/gornicy-ekspertci-pge-giek-neguja-zmiane-klimatu-448/>.
99. CIRE:PL (2022, 29 September), 'Dr. Adam Czyżewski, główny ekonomista w PKN ORLEN S.A. w panelu dyskusyjnym pn. Finansowanie inwestycji w zakresie bezpieczeństwa energetycznego oraz transformacji energetycznej', <https://www.cire.pl/artykuly/serwis-informacyjny-cire-24/dr-adam-czyzewski-glowny-eko>

- nomista-w-pkn-orken-sa-w-panelu-dyskusyjnym-pn-finansowanie-inwestycji-w-zakresie-bezpieczenstwa-energetycznego-oraz-transformacji-energetycznej.
100. Daniel Obajtek (2021, 7 October), 'Obajtek: Nie uciekniemy przed transformacją energetyczną, ale czas na hamulec refleksji', <https://biznesalert.pl/obajtek-nie-uciekniemy-przed-transformacja-energetyczna-ale-czas-na-hamulec-refleksji/>.
 101. wGospodarce.pl (2014, 15 September), 'Związki zawodowe odrzucają politykę klimatyczną UE', <https://wgospodarce.pl/informacje/16113-zwiazki-zawodowe-odrzucaja-polityke-klimatyczna-ue>.
 102. Solidarnosc Katowice (2019, 13 November), 'Polska nie może zgodzić się na tzw. neutralność klimatyczną', <https://solidarnoskatowice.pl/polska-nie-moze-zgod-zic-sie-na-tzw-neutralnosc-klimatyczna/>.
 103. Gazeta.PL (2022, 27 June), Grzegorz Sroczyński, 'Zielona transformacja to będzie dla nas koszmar. Wydatki, wydatki, wydatki', <https://next.gazeta.pl/next/7,151003,28625406,zielona-transformacja-to-bedzie-dla-nas-koszmar-wydatki-wydatki.html>.
 104. Krajowa Izba Gospodarcza (2022, 7 November), 'Relacja z XI Meetingu Gospodarczego KIG „Z węglem – bezpiecznie, w zieloną transformację”', <https://kig.pl/uslugi/konferencje-kongresy-szkolenia/wydarzenia-cykliczne/europejski-meeting-gospodarczy-2022/>
 105. Forsal.PL (2013, 22 November), 'Guz: Porozumienie klimatyczne—tak. Ale miejsca pracy są ważniejsze', <https://forsal.pl/artykuly/747864,opzz-solidarnosc-zwiazki-guz-porozumienie-klimatyczne-opinia.html>.
 106. WEI (2020, 16 March), 'Polska energetyka u progu transformacji', <https://wei.org.pl/2020/blogi/gospodarka/admin/polska-energetyka-u-progu-transf-ormacji/>.
 107. Pie.net (2020), 'Time for Decarbonisation', Polish Economic Institute, Warsaw, <https://pie.net.pl/wp-content/uploads/2020/08/PIE-Time-for-decarbonisation.pdf>.
 108. Hauke Engel et al. (2020), *Carbon-Neutral Poland 2050: Turning a Challenge into an Opportunity*. Warsaw: McKinsey & Company.
 109. Council of the European Union (2023), 'Draft Directive of the European Parliament and of the Council Amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652 – Statements, p. 4, <https://data.consilium.europa.eu/doc/document/ST-13188-2023-ADD-1-REV-3/en/pdf>.
 110. Szulecki, 'Securitization and State Encroachment'.
 111. Franco Ruzzenenti and Aleksandra Wagner (2018), 'Efficiency and the Rebound Effect in the Hegemonic Discourse on Energy', *Nature and Culture*, 13, 3: 356–377, <https://doi.org/10.3167/nc.2018.130303>.
 112. Bruce Tranter and Kate Booth (2015), 'Skepticism in a Changing Climate: A Cross-National Study', *Global Environmental Change*, 33: 154–164, <https://doi.org/10.1016/j.gloenvcha.2015.05.003>.
 113. CAKE Centrum Analiz Klimatyczno-Energetycznych (blog) (2021, 8 July), 'Nowa Analiza: Polska net-zero 2050', [virtualmedia.pl, https://climatecake.ios.edu.pl/aktualnosci/news-cake/analysis-poland-net-zero-2050-the-roadmap-toward-achievement-of-the-eu-climate-policy-goals-in-poland-by-2050-summary/?lang=en](https://climatecake.ios.edu.pl/aktualnosci/news-cake/analysis-poland-net-zero-2050-the-roadmap-toward-achievement-of-the-eu-climate-policy-goals-in-poland-by-2050-summary/?lang=en).

114. Solidarnosc (2021, 5 August), 'Hutek: "Fit for 55" to krok w przepaść', <http://knurow.solidarnoscgornicza.org.pl/2021/08/05/hutek-fit-for-55-to-krok-w-przepasc/>.
115. Marcelli Sommer (2021, 7 September), 'Roszkowski: Nawet polexit nie uratuje węgla [wywiad], DGB, <https://serwisy.gazetaprawna.pl/ekologia/artykuly/8238583,marcin-roszkowski-zmiany-klimatyczne-transformacja-unia-europejska-wywiad.html>
116. COP 22 (2016, 11 July) 'Leśne gospodarstwa węglowe' i 'bezodpadowa energetyka węglowa', Gram w Zielone, <https://www.gramwzielone.pl/trendy/24032/cop22-lesne-gospodarstwa-weglowe-i-bezodpadowa-energetyka-weglowa>.
117. Interview 1, MP, 20 December 2019.
118. Centrum Koordynacji Projektów Środowiskowych (2016, 6 May), 'Nowy projekt w CKPŚ – Leśne Gospodarstwa Węglowe', https://www.ckps.lasy.gov.pl/aktualnosci/-/asset_publisher/HTXX9aadlRBB/content/nowy-projekt-w-ckps-lesne-gospodarstwa-weglowe.
119. Zbigniew W. Kundzewicz and Piotr Matczak (2012), 'Climate Change Regional Review: Poland', *Wiley Interdisciplinary Reviews: Climate Change* 3, 4: 297–311, <https://doi.org/10.1002/wcc.175>.
120. Aleksandra Fedorska (2023, 12 February), 'Poland: Wind Power Runs Out of Steam', *DW*, <https://www.dw.com/en/poland-wind-power-runs-out-of-steam/a-64666398>.
121. Daniel RadomskiTwitter (18 March 2023), <https://twitter.com/LombatSsc/status/1637002465458438148/photo/1>
122. Interview 9, MP, 22 June 2021.
123. Instytut Ochrony Środowiska, 'Krótka Historia Działań i Wyzwania Na Rzecz Ochrony Klimatu w Polsce 1988–2018–2050'.
124. Kamil Marcinkiewicz and Jale Tosun (2015), 'Contesting Climate Change: Mapping the Political Debate in Poland', *East European Politics*, 31, 2: 195, <https://doi.org/10.1080/21599165.2015.1022648>.
125. UNFCCC (1999, 25 October), 'United Nations Conference on Climate Change Opens in Bonn, Germany', COP 5 Press Release No. 1, <http://unfccc.int/cop5/media/pressre1e.html>.
126. Aleksandra Arcipowska and Cynthia Elliott (2018, 5 December), 'Here's Poland's Recent History on Climate—and How They Can Steer the Future at COP 24', World Resources Institute, <https://www.wri.org/insights/heres-polands-recent-history-climate-and-how-they-can-steer-future-cop24>
127. Kacper Szulecki et al. (2016), 'Shaping the 'Energy Union': Between National Positions and Governance Innovation in EU Energy and Climate Policy', *Climate Policy*, 16, 5: 548–567, <https://doi.org/10.1080/14693062.2015.1135100>; Pierre Bocquillon and Tomas Maltby, 'The More the Merrier?'
128. Polish Government (2018), 'Solidarity and Just Transition Silesia Declaration', <https://www.documentcloud.org/documents/4936426-Solidarity-and-Just-Transition-Silesia>. Accessed 26 July 2023.
129. Polish Government Ministry of Climate and Environment, 'Energy Policy of Poland until 2040', p. 8.
130. Interview 3, Civil Servant, 15 May 2020.