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Abstract

The importance of energy as a common good becomes especially pronounced during crises. This paper reconstructs the response of housing cooperatives – a specific type of energy community – to the energy crisis. To this end, we apply eighteen impression management strategies inspired by Erving Goffman's dramaturgical sociology. We analyse a unique dataset of annual reports from Polish rural housing cooperatives, which display a range of reactive, proactive, and collaborative attitudes to high energy prices and fuel shortages following the embargo on Russian coal in 2022. The energy crisis led four out of five rural housing cooperatives to adopt defensive impression management strategies. The three most common were crisis attribution (66%), resourceful management (18%), and deliberative silence (12%). These strategies appear to reflect an effort to position cooperatives within a dual role, balancing social and economic rationales. The collective attitudes undertaken by the cooperative boards to support common resources were also ambiguous, reinforcing existing power hierarchies and dominant logics rather than emerging from grassroots initiatives, due to the limited capacities and incentives in structurally disadvantaged areas. Therefore, our findings portray rural housing cooperatives as solitary and routine actors, undertaking an effort often beyond their capacities and call for their greater recognition as energy commons crucial for ensuring local energy security.

Keywords: housing cooperatives, heating, local communities, energy transition, dramaturgical sociology

JEL: P13, O18, P28, P48, P31

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1. Introduction

The importance of energy as a common good becomes more pronounced during crises. Commons management is increasingly strained by external shocks, ranging from ecological shocks to institutional and economic disruptions, which demand adaptive governance strategies to sustain resource systems. Studies show that effective responses often involve reconfiguring institutional arrangements, through nested governance (Lam and Chiu, 2016), leveraging social learning (Edelmann et al., 2020) and drawing on collective identity and local knowledge to maintain flexibility and legitimacy (Bockstael and Berkes, 2017). These adaptations enhance long-term resilience through hybrid governance or participatory structures by enabling multi-scalar coordination and decentralised decision-making (Hughes et al., 2022; Thapa and Scott, 2019).

While this body of research has significantly advanced understanding of socio-ecological adaptation in forests, water, and agricultural commons, there is a notable gap in examining how adaptive strategies translate to the governance of energy commons. Energy commons are particularly important, as these systems face decarbonisation pressures, supply interruptions, and various collective ownership models. Thermal energy communities that manage shared energy resources (Djinlev, Pearce, 2025) represent a particularly interesting form of commons. Despite their potential to foster collective action and self-organisation through shared governance mechanisms, they remain understudied in current research. The energy crisis has triggered new forms of cooperation within these communities, revealing their capacity to manage energy as a common good through rules-based coordination.

Our paper aims to reconstruct the energy crisis strategies and attitudes in housing cooperatives, focusing on how cooperatives framed their efforts to cope with the challenge while maintaining their role as intermediaries and providers of essential common heating services. The housing cooperatives fit the criteria defining energy commons with their local use, small-scale, democratic, non-governmental and community-oriented character (Marzban et al., 2023, after Bauwens et al., 2024). We reveal cooperative activities and impression management strategies, and assess the attitudes of cooperative decision-makers towards skyrocketing prices and fuel shortages. We focus on institutional responses and the symbolic and communicative strategies they deployed to justify, manage, or conceal their actions under severe institutional and material stress conditions.

We contribute to a nuanced understanding of the energy crisis response mechanisms among intermediary housing institutions, enriching the ongoing discourse on energy governance, institutional resilience, and rural commons. In contrast to large and well-networked urban housing cooperatives in Central and Eastern Europe, we found that rural ones that independently produce and supply heat with weak financial, networking and political resources experienced higher increases in energy expenditures and received poorly allocated state support. Consequently, undertaking development efforts such as energy transition requires better recognition of housing cooperatives in state policies, providing targeted financial support, and reversing the policy attention from energy cooperatives based on electricity production towards those responsible for heating, which is crucial for ensuring local energy security.

Our study focuses on rural housing cooperatives that mostly use fossil fuels and manage small-scale energy grids. We apply the framework of the commons to resource management during the crisis, which requires introducing new management settings and incentives. This refers to Ostrom's theory of institutional design, where framing shared problems and constructing shared norms—precisely the domain of impression management—are essential to aligning individual incentives with collective outcomes (Ostrom, 2005). Our study shows how the commons framework can serve as a valuable foundation for managing shared resources under pressure. In doing so, we contribute to a broader understanding of commoning, highlighting its multiple

dimensions: resources, users, processes, and institutions (Feinberg et al., 2021) and how the interactions between these elements are shaped (Arbell, 2023) during the unprecedented situation.

We focus on the strategies and attitudes of rural housing cooperatives in Poland, where the consequences of the energy crisis heavily impacted heating services. The embargo on coal introduced in April 2022, two months after the full-scale Russian military invasion of Ukraine, led to price increases and posed a risk of fuel shortages (Černoch et al., 2024). This situation was particularly severe for households relying on individual coal-based heating systems and those in multi-family buildings, where intermediaries, such as housing cooperatives, remain crucial as heating producers or providers. In response to the energy crisis, households began to explore multiple adaptive strategies: reducing energy consumption, renegotiating contract terms, and investing in self-generation technologies (Liobikienė et al., 2023; Brauer et al., 2024; Blumberga et al., 2024). While considerable academic attention has been paid to national (Kuzemko et al., 2022; Osička and Černoch, 2022; Steffen and Patt, 2022; Żuk and Żuk, 2022) or individual households' responses to the energy crisis (Brauer et al., 2024; Burlinson et al., 2024; Kirchler et al., 2024), the decision-making processes within housing intermediaries remain underexplored. Understanding attitudes at this level is crucial for comprehending energy transitions in commons, where various logics of undertaking decisions occur. Therefore, this article addresses this gap by focusing on the strategies and decisions made within housing cooperatives – specifically, post-socialist housing institutions – during the 2022 energy crisis.

Our paper used Erving Goffman's dramaturgical sociology-inspired framework to analyse the settings and positions of housing cooperative management boards. The empirical investigation relies on a unique dataset of over 3,400 financial and technical reports of all housing cooperatives in Poland and fieldwork verification in four rural cooperatives using solid fuel or renewable energy sources. We narrowed the sample down to the 215 rural entities that are almost individually responsible for providing heating locally. The analysis employed automatic extraction tools and qualitative techniques to collect and analyse acquired data. Next, Goffman's-inspired impression management framework (Dunne et al., 2021) enriched this analysis of annual reports by focusing on the dramaturgical aspects of the performance itself, which enabled us to distinguish the three most common housing cooperative strategies: crisis attribution, resourceful management, and deliberate silence. Then, we discussed managing energy as a common good during the crisis, provided limitations and pointed out the avenues for further research in the conclusions.

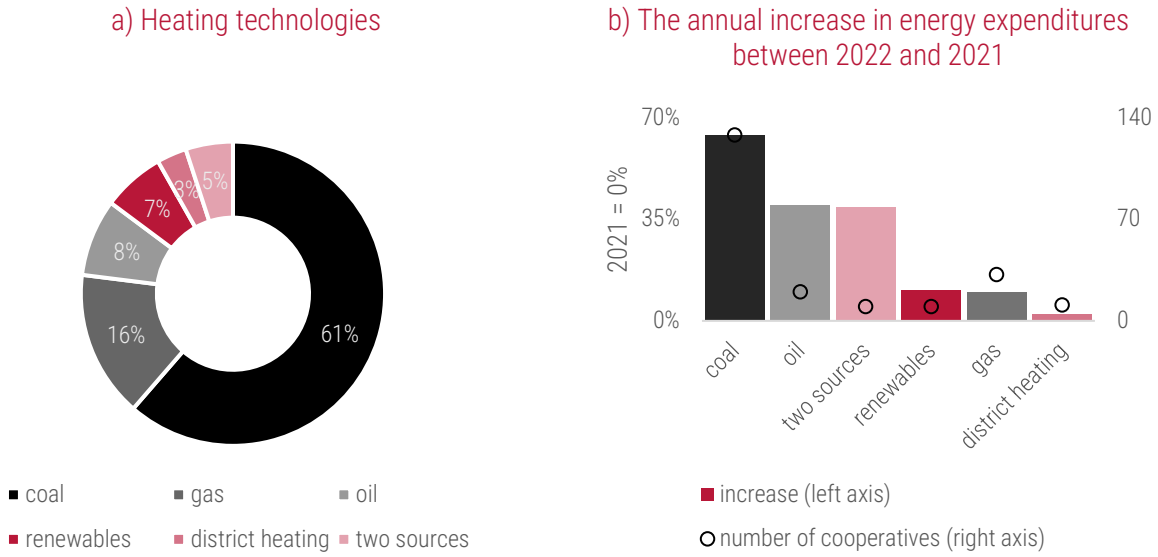
2. Institutional setting: rural housing cooperatives during the energy crisis of 2022 in Poland

Housing cooperatives in Poland are both voluntary associations and enterprises organised around a common purpose, resources and democratic decision-making. According to Polish law, the primary objective of a housing cooperative is "satisfying their members' housing needs" (Act of 15 December 2000 on Housing Cooperatives). The legal regulations indicate that housing cooperatives perform primarily managerial functions, administering real estate and maintaining its technical condition. The highest governing body of the housing cooperative is the general assembly, which consists of all cooperative members. This body meets annually to make the most critical decisions and appoints the other structures — the cooperative management board and supervisory board (Milewska-Wilk, 2023). The management board is responsible for day-to-day decisions. The supervisory board, mostly from the cooperative members, controls the board. The institutional structure of a housing cooperative depends on the cooperative size. These are large cooperatives, mainly in post-socialist housing estates, even with more than 30,000 members, and micro-cooperatives, with only several members living in one multi-family building. While the large and medium housing cooperatives hire professional housing

stock managers and often operate as corporate enterprises, small and micro cooperative work is usually based on part-time jobs, voluntary involvement, and less formal relations.

Housing cooperatives account for 15% of the Polish residential housing stock. One in five housing cooperatives is in rural areas. Rural cooperatives can be categorised into three distinct types: suburban, industrial, and post-state collective farming[1] (Frankowski et al., 2023). Since the early 1990s, many of these cooperatives have encountered social, economic, and ownership challenges when the state offered residents the attractive buyout of the apartments as compensation for lost state-led jobs, but without common infrastructure. Therefore, the remaining housing cooperatives have continued to provide services to local communities, including heating with boiler rooms as an integral infrastructural component of the estates, and, unlike the individual farming entities (Piwowar, 2024), they remain underexplored parts of the Polish rural residential energy landscape. As our interviewee at the governmental body in charge of housing cooperatives put it: *"These buildings are in such poor condition that (...) if the building supervision was very scrupulous, probably many of them would be excluded from use"*. The multi-family buildings of rural cooperatives are relatively small, 2-3 floor high blocks made of concrete during the 1960s-1980s period. Their boiler room supplies them with heat and predominantly relies on fossil fuels (Figure 1a).

Figure 1. Energy sources in rural housing cooperatives



Source: Own elaboration based on administrative data on housing cooperatives.

We estimated that over 60% of these cooperatives use coal as a primary heating source (almost twice the share of single-family buildings using coal in Poland; Statistics Poland, 2023), which is traditionally considered the cheapest available option (Furmankiewicz et al., 2021). Only 7% of rural housing cooperatives have adopted renewable energy sources (Figure 1a), with biomass (wood or pellet) being the most widespread. Advanced heating solutions like heat pumps or biogas remain rare (2%). Some cooperatives, primarily industrial and suburban, utilise network solutions such as district heating or gas (19%). The energy crisis in 2022 had a pronounced impact on housing cooperatives' expenditures, especially those that rely on coal. The energy costs

[1] Post-state collective farming cooperatives are a remnant of the State Agricultural Farms that existed in Poland until the economic transformation in the first half of the 1990s.

for these cooperatives were nearly 60% higher than in 2021 (Figure 1b). Cooperatives dependent on gas or district heating experienced only slight increases in their expenditures.

3. Methods

Our paper used Erving Goffman's dramaturgical sociology-inspired framework to analyse the strategies and attitudes of housing cooperatives. In our initial analysis, the cooperative annual report was treated as a detailed summary that addresses unexpected events carried out by agents whose leadership and survival efforts are crucial, along with their mitigation activities, culminating in a closing speech that requests discharge for the subsequent year. Next, the impression management framework enriched this analysis of annual reports by focusing on the dramaturgical aspects of the performance itself (Dunne et al., 2021), guided by the assumption that each strategy report is a piece of communication that is designed in a particular way, but perhaps more importantly, sometimes significantly reframes certain events (Mueller, 2018). This framework shifts the emphasis to the aesthetic elements of the performance, specifically, the techniques used by the reporter to shape their image and influence how they are perceived and assessed by the audience (Schmidt and Deppermann, 2023). Goffman's dramaturgical perspective and impression management framework thus support the application of discourse analysis elements, such as language, rhetoric, and framing, to describe and evaluate how institutional representatives present themselves in specific social contexts. In the organisational sociology tradition that draws on Goffman, impression management cannot be interpreted merely as expressive activity, but as a strategic tool that steers behaviour by defining what counts as success or failure, who is accountable, and what future actions are made possible or foreclosed. This resonates with findings that, in uncertain environments, actors strategically shape perceptions to influence credibility, manage accountability, or suppress dissent (Gambetta, 2009). Therefore, the dramaturgical sociology approach can provide a solid interpretation framework for analysing what happened in housing cooperatives and how they responded to the crisis, where the discursive framing of problems and solutions becomes a mechanism for reallocating risk, shaping trust, and legitimising inaction or deferral.

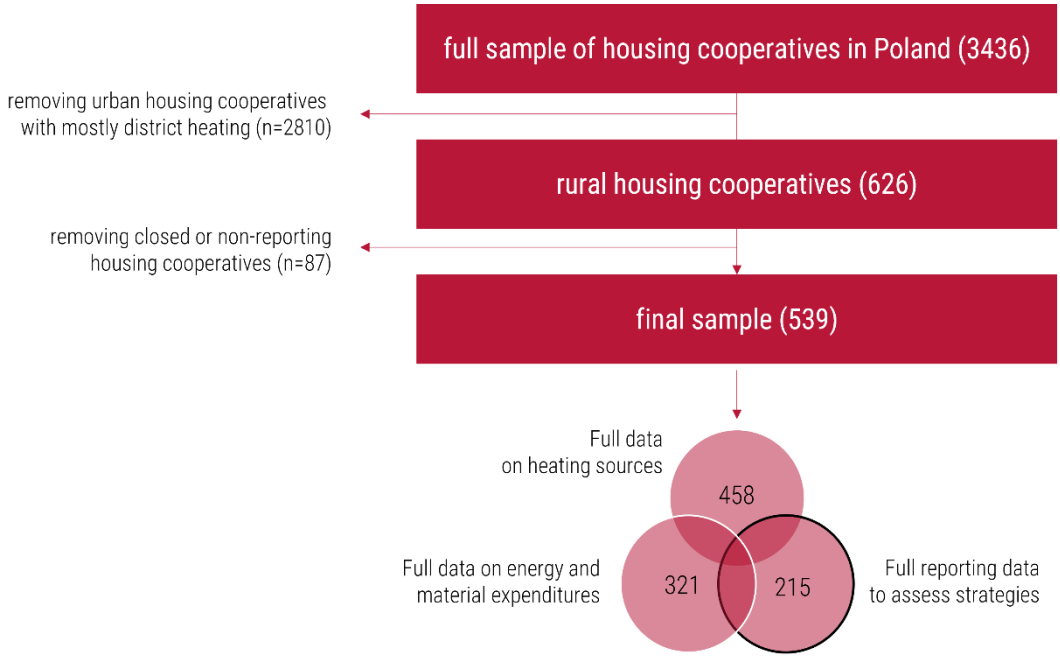
Our study is based on a unique dataset of housing cooperatives in Poland comprising information from over 3,400 annual financial and technical reports. These reports include quantitative data and cooperative management narratives, summarising the activities throughout the year[2]. Despite many differences, a standard structure can be observed, with a theatrical beginning, development (usually revealing behind-the-scenes details), and a predictable conclusion, typically requesting residents (the audience) to accept it. As Dunne et al. note, this format is also shaped by the need to maintain legitimacy, which "secures acceptance of controversial changes and manipulates perceptions of corporate achievement" (Dunne et al., 2021, p. 1). The financial and energy crisis disrupted routine operations, forcing housing cooperative managers to act as standard procedures

[2] Each housing cooperative board must submit reports to the National Registry Court; in terms of the smaller, the shorter list of documents is required. There is a lot of effort to find these publicly available data; more convenient access to them is behind a paywall or restricted. Moreover, they are not indexed in web browsers, and some are still prepared by hand or on a typewriter. The format of economic and technical reports varies according to established accountancy and managerial practices and routines. In the first type, the cooperative submits simplified reporting, which includes only accounting tables or standard generic information about the previous year. In the second type, housing cooperative boards report official and factual information without a specific narrative. In the third, most popular and extensive type, the cooperatives submit technical reports from board activities with narratives intended for internal communication and future controllers from cooperative audit unions. Therefore, the length and elements of annual technical reports vary significantly between types of cooperatives. Professional reports prepared by medium-sized housing cooperative boards often include visual elements like figures and tables. Conversely, small and micro cooperatives mostly use short, brief, and dense narration.

could have jeopardised their reputation, image, and legitimacy. In that way, we claim that unexpected events made these reports a rich and unique data source.

Our final sample consisted of rural housing cooperatives that provided reliable reports for analysing narratives. We initially analysed a total sample of rural housing cooperatives in Poland (Figure 2). After excluding those already closed or without the published report from 2022, we obtained 539 records. Among these, some cooperatives provided data on heating sources or energy expenditures but lacked narrative parts. Finally, we thoroughly analysed the documents of 215 cooperatives, carefully reading and classifying narratives relevant to the energy issues to find the most common denominators or typical imaginaries. Based on information on the structure of 215 housing cooperatives, we carefully estimate that this group represents 45% of all the rural housing cooperative stock in Poland and is inhabited by 60–80 thousand residents.

Figure 2. Selection of housing cooperatives to the study



Source: Own elaboration based on administrative data.

Next, we applied the impression management framework to a final sample of cooperative reports focusing on the dramaturgical aspects of the performance. The impression management framework allowed us to recognise the cooperative strategies. We used the typology of eighteen impression management strategies after Dunne et al., 2021 (Appendix 1) to assess the dominant attitudes based on the energy-related content in the annual reports, which helped us to uncover each housing cooperative's preferred communication style. Faced with a task heavily influenced by the researcher's subjective judgment, we prepared a specific Chat GPT-4 prompt using embedded large language models to classify the annual technical reports' three most probable, pre-defined, hierarchically ordered narratives[3]. Then, the classification was confronted with notes on a personal interpretation of the strategy by the two research team members. Relevant text data about the energy crisis were stored and assigned to cross-reference narrative declarations for future study replication.

Finally, we juxtaposed the content of the report directly with insights from housing cooperative representatives. Ultimately, we present the results of field visits in four rural cooperatives across two regions in Northern Poland,

[3] The command is available in the Appendix 1 as well as the graph presenting most popular impression management strategies and connections between them.

with a variety of different cooperatives (Appendix 2). We reconstructed the energy crisis in two cooperatives using coal and in two cooperatives that use heat pumps to heat their buildings, which had been implemented just before the onset of the energy crisis. The selection of cooperatives was intentional, based on the review of annual reports and the availability of housing cooperative boards[4]. In each cooperative, we interviewed the cooperative managers (Table 1), visited the boiler room and common spaces (office and staircases of the multi-family buildings), and conducted informal conversations with residents. These interactions allowed us to reconstruct the history of the energy crisis and the various repercussions of the current situation within the cooperatives. The qualitative verification provided a deeper understanding of the crisis's impact and offered critical insights into the impression management strategies employed by cooperative board members in their annual reports.

Table 1. Interviewed housing cooperative board members

#	Gender	Age	No of buildings	Heating source	Region
01	man	46	6	Heat pumps + photovoltaics	Warmia and Masuria
02	man	44	4		
03	woman	71	4	Coal	Pomerania
04	man	68	8	Coal + wood	

Source: Own elaboration based on information obtained during the fieldwork.

4. Results

In Section 4.1, we discussed how cooperative members framed the year 2022, set the scene, and articulated the purpose behind their actions. We also identified the leading actors and their activities, paying particular attention to collective-oriented activities, which we considered to be the unexplored aspect of dealing with the energy crisis. In Section 4.2, we emphasised impression management strategies.

4.1. Socially-constructed crisis year by housing cooperatives

The energy crisis manifested very acutely in Poland due to the full-scale Russian military aggression on Ukraine that started in February 2022. Two months later, the Polish government introduced an embargo on Russian coal, raising energy prices and creating fuel shortages (Appendix 2, Figure A2.1). In the reports, rural housing cooperatives presented the energy crisis as an enormous challenge they faced: *'external conditions beyond the cooperative's control*, such as *'the drastic increase in fuel prices'*, *'the rampant increase in inflation'*, in the face of which *'the management had to face many challenges'*. Additionally, cooperatives highlighted the impact of the COVID-19 pandemic on their activities, which led to decision-making difficulties, remote meetings and the board's work, despite almost two years since the pandemic's start. Therefore, the scene for housing cooperatives was set as a constant struggle with unusual conditions.

The occurrence of successive crises led to a strong public intervention response**.** In 2021, the Polish government removed the excise duty on electricity for households and transport fuels and reduced the value-added tax rate for natural gas, district heating, and electricity. A relief allowance (85–310€) was also offered based on the number of household inhabitants and their heating source. However, these solutions, collectively called the anti-inflation shield, rewarded high-income households the most due to their higher consumption and neglecting distributional effects (Sokołowski et al., 2021). After the coal embargo, which led to prices

[4] Rural housing cooperatives typically do not provide websites, e-mail addresses or phone numbers, and their opening hours are known only to local residents. Consequently, the field research was inherently spontaneous, necessitating considerable flexibility and significant time investment.

skyrocketing due to the high demand, the government offered a coal allowance (660€ per household) and support for other individual heating sources such as biomass, gas, and oil. However, cooperatives were excluded from state support, as they were only available to individual consumers. Only cooperatives using heating from the district network or natural gas kept the prices relatively stable (Figure 1b). In contrast, for those using coal, biomass, and oil, the new realities resulted in the inability to purchase sufficient fuel at an affordable price to heat their buildings. According to cooperative boards, they *'closed off the real possibility of support from the state'* and *'cooperatives could not purchase fuel at regulated prices, and fuel shortages caused significant psychological strain, as well as reluctance to continue operations'*. In this act, the role of cooperatives as common heating providers became more critical than ever.

The official purpose of the housing cooperatives is to satisfy their members' residential housing needs. Most cooperatives indicated the purpose of their activities as '*serving the residents and meeting their expectations in the field of housing'*. The other mentioned their purposes *'to improve the quality of the services provided, the living conditions, the aesthetics of the housing estate*', '*to maintain the state of the assets and perform economic tasks'*, and *'to invest prudently in the infrastructure, securing the stability of the operation'*. A small number of entities declare their identity with the cooperative movement, putting a stronger accent on the commanding role of the cooperative members, indicating among the tasks *'acting for the benefit of the residents'* or *'the common good of the cooperative'* as a whole. Based on this, setting long-term purposes in cooperatives is rare, and most activities are planned on a short-term horizon.

Faced with rising fuel costs, the most popular cooperative response was straightforward and reactive: increasing housing service fees. Other reactive strategies included cancelling planned investments, drawing from renovation funds, and occasionally taking short-term liabilities. In the most challenging, rare situations, cooperatives decided to disconnect hot water delivery during the summer or even discontinue collective heating, which made each resident responsible for heating their apartment (Table 2).

Table 2. Activities undertaken during the energy crisis by rural housing cooperatives in Poland

Attitudes	Activities	Description	Frequency
Reactive	Increase in service fees	Increases in heating fees, maintenance fund contributions, or rent	often
	Suspension of investments	Limitation of long-term and current renovation plans, cancellation of certain investments	
	Depletion of resources	Utilisation of resource reserves, reallocation of funds from maintenance reserves	
	Getting into debt	Failure to regulate current liabilities, counting on better economic conditions	occasionally
	Cooperative closure	Discontinuation of heating or hot water provision, conversion or transformation of a housing cooperative into an association	rare
Proactive	Increase energy efficiency	Reduction of consumption through repairs and maintenance in boiler rooms or changes in fuel types	often
	Negotiations on the energy market	Negotiations with various suppliers, i.e. direct coal procurement from mines, taking advantage of shield state support (energy price freezes), tariff switching	
	Voluntary work	The utilisation of internal resources (e.g., the community work of the board members), performing own repairs	occasionally

	Fuel stacking	Supplementing the primary heating source, using other stoves	
	Energy transition	Replacing the heating source	rare
Collective	Expecting solidarity	Expectation of targeted heating contributions from residents, funded by government allocations	often
	Mobilising and educating residents	Meetings with residents, appeals for energy conservation, information on entitled rights (e.g., housing allowances), and education on the necessity of regular payments	occasionally
	Seeking external help	Seeking funds and grants from other entities and appeals from members of parliament/senators to resolve the problematic situation.	rare

Source: Own elaboration based on registry data.

Among proactive attitudes, housing cooperatives most often increase energy efficiency through conservation and minor repairs and negotiate with energy companies or coal mines. Many cooperatives also engaged in extensive paperwork, sending official requests to gas suppliers or governmental bodies to secure more favourable tariffs. In some cases, these efforts resulted in lower energy prices, helping to avoid drastic expenditure increases. Cooperatives occasionally adapted stoves to accommodate wood instead of coal or started an unused stove designed for a different fuel type. Finally, some cooperatives accelerated their transition to cleaner energy sources, though these rare efforts originally stemmed from pre-crisis plans with motivations other than high coal prices.

The crisis prompted the emergence of new, community-based rules of participation and shared responsibility, aligning individual actions with collective interest and echoing commons-oriented thinking. The most popular collective effort of cooperatives was expecting solidarity and coordinating the acquisition of coal allowances. The coal allowance (660€) was a one-time cash compensation for high coal prices from the government. Apart from collecting these allowances, cooperatives mostly encouraged residents to apply and transfer these benefits to the cooperative account to cover collective purchases. In other cases, they asked residents to buy fuel and pass it to the cooperative. For that purpose, most cooperatives actively intermediated between residents and state benefit distributors. Another occasional form of collaborative activity involved mobilising and educating residents about energy savings. These efforts included announcements on staircases (Appendix 3), appeals and discussions during meetings, often framed around the argument of the common good. These two internally focused activities were more popular than seeking external help from other actors.

As an operational body, the housing cooperative board, as the report author, functioned as a critical actor. The supervisory board was often mentioned as an important partner supporting decision-making. Other actors seem omitted in annual reports as the reporting institution focuses on their performance. Among rarely mentioned actors by cooperatives, it is worth mentioning energy suppliers, local government representatives (such as mayors, municipal officials, and village heads), and, less frequently, central government bodies (as institutions responsible for reacting to energy crises or in charge of post-state collective farming resources), regional financial scheme operators, cooperative banks as well as local social welfare centres, distributing coal allowances. Housing cooperatives also mentioned lawyers and bailiffs for residents' debts.

4.2. Impression management strategies

The energy crisis led four out of five rural housing cooperatives to adopt defensive impression management strategies. These cooperatives reported significantly higher energy and material cost increases than those that

relied on an assertive strategy. Bigger rural cooperatives found it easier to adopt assertive strategies, likely due to greater financial and staffing resources, proximity to large urban centres, and, in some cases, more efficient heating solutions (supported by government anti-inflation shield). In the 215 cooperatives studied, we identified 16 different dominant strategies[5]. Due to the similarities between these strategies, we categorised them based on the dominant strategy[6] (frequency of occurrence), character and type (assertive/defensive), merging them into three more extensive approaches: crisis attribution, resourceful management, and deliberate silence, covering almost 96% of the cases (Table 3).

Table 3. The most popular approach and strategies of impression management

Approach	Type	Strategy	Percentage
Crisis attribution	Defensive	External attribution	35%
		Justification	31%
Resourceful management	Assertive	Self-promotion	10%
		Exemplification	7%
		Enhancement	1%
Deliberate silence	Defensive	Selectivity	7%
		Omission	3%
		Concealment	2%
Other	Mixed	performance comparisons, internal attribution, ingratiation, restitution, supplication, organisational handicapping, apologies [7]	4%

Source: Own elaboration based on housing cooperative reports.

Approach 1: CRISIS ATTRIBUTION (66%)

Applying the crisis attribution approach, cooperative boards perceived the energy crisis as an emergency—an unpredictable event beyond their control. Therefore, they primarily employed two defensive strategies within this approach: justification and external attribution. These two strategies were dominant in two-thirds of cooperatives. They stemmed from the need to justify and defend their actions, which were taken under exceptional and external circumstances beyond their influence. Cooperatives tried to justify and explain the effects of the energy crisis and their narratives through visual means. They emphasised costs, bolded key figures showing heat and electricity consumption, and presented tables detailing monthly purchases of coal, wood, and other raw materials. Occasionally, cooperatives used additional documents, quotes from other individuals, reports, and photographs. The rent arrears emerged as a significant issue, with non-paying tenants often being portrayed as 'black sheep' of the community who could not be easily dealt with (e.g., in situations where the municipality had no social housing apartments available). Other examples of external attribution included cases where inhabitants of some buildings opted out of a housing cooperative to form an association with their independent heating source, putting the rest of the cooperative in a challenging financial situation.

[5] Neither "disassociation" nor "denial" strategies were observed, suggesting that cooperatives acted as rational entities and did not deny the challenging circumstances they faced. The definitions borrowed from Dunne et al. (2021) are provided in Appendix 1.

[6] As a classification based on the only dominant strategy can be somewhat misleading, we asked artificial intelligence to distinguish the three most probable attitudes in each cooperative case and connect them on a network graph (Appendix 1.2). Of the 816 possible combinations of the three dominant strategies employed by cooperatives, 104 combinations were observed, representing just under 13% of all available options. The most common combination was external attribution/justification/selectivity (18%).

[7] From the most to the least popular.

Approach 2: RESOURCEFUL MANAGEMENT (18%)

The second approach, resourceful management, encompassed assertive strategies such as self-promotion, exemplification, and enhancement. Housing cooperatives representing this approach were eager to highlight their achievements in securing savings and maintaining financial liquidity during the crisis. These narratives often included reaching goals despite unfavourable conditions and attributing success to the management's sound decisions, resourcefulness and professionalism. In this context, cooperative boards positioned themselves as entities in control—competent, constructive, and able to keep maintenance fees relatively stable despite global market disturbances. By presenting themselves this way, cooperatives expected approval for their proactive measures (such as negotiating with companies, conserving energy, or sourcing cheaper fuel) or earlier decisions (storing coal, conducting renovations), which enabled the cooperative to survive and remain the local community self-sufficient. The exemplification strategies included formal statements underscoring legal compliance and commitment to cooperative mission, such as corporate language, such as *"we operate efficiently and by the highest standards"*. Housing cooperatives using these strategies also expressed openness to suggestions and proposals from residents and fulfilled their duties in compliance with legal requirements. The effectiveness of these efforts was usually supported by citing financial results, the level of fees, or the number of resolutions passed, all of which demonstrated that the cooperative was functioning diligently and responsibly, serving as evidence of a well-managed organisation. The approach containing self-promotion, exemplification, and enhancement was dominant in 18% of cases.

Approach 3: DELIBERATE SILENCE (12%)

The third most popular approach was deliberate silence, covering selectivity, omission or concealment. Housing cooperatives using these strategies avoided commenting on rising energy costs despite addressing other issues or mentioning crisis-related topics. Instead, they tended to focus on routine aspects of the cooperative's operations or highlight positive elements, even when facing adverse financial outcomes. Selectivity in reporting did not extend to discussing potential causes of such situations or any corrective measures taken. Through omission or concealment, housing cooperatives aimed to secure the supervisory board's and residents' support without tough, direct questions or glossing over the issue entirely. As a dominant strategy, selectivity, omission, or concealment appeared in 12% of cases. However, this approach may be more widespread, as some housing cooperatives entirely omit to discuss[8] such matters in their annual statements despite significant increases in energy expenditures visible in profit and loss accounts between 2021 and 2022 (Figure 1b).

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As the analysis shows, despite the differences in the measures taken and their effects, most cooperatives managed energy as efficiently as possible during the crisis. The strategies were not constantly developed with the community—even collective activities were facilitated by housing cooperative managers. Often, quick and top-down decisions prioritised the cooperative's overall interests, ensuring uninterrupted heat supply and infrastructure security, even if this later required defensive strategies like external attribution and justification, potentially leading to housing cooperative board management dismissal.

4.3. Fieldwork verification: coal and heat pump communities in transition and locked-in

In direct interactions, cooperative members made a much greater effort to create a positive image of their work than in their reports, which were primarily intended to serve as objective evidence of the cooperative's and its

[8] Two first types of cooperatives described in Section 3.

residents' financial deterioration. The desire to highlight their achievements was also evident in the display of recent trophies and certificates of recognition in small office spaces (Appendix 4).

Cooperative board members adopted a managerial stance toward the local community. Compared to their reports, most expressed dissatisfaction with the local community, which remained passive and accustomed to the previous socialist system settings. One of them noted: '*Most often, residents speak up only to ask what they are paying for, but when it comes to contributing something themselves, they remain inactive. You see, as I said, it's hard to change. They don't understand that this piece of land is their property'* (#03). Another board member added: *'It all comes down to the fact that people used to work in a way where they always went to the foreman, did their job, and never had any ideas of their own'* (#04). Given the low level of social control, a significant amount of responsibility rests on the cooperative's management board. This can lead to poor decisions regarding energy commoning, as seen in the cooperative case (#01), where the previous board decided to replace coal heating with heat pumps without prior retrofit activities. As a result, the current board has been forced to repair the damage while facing residents' complaints: *'Everything looks nice now—no chimney, no smoke, it's all great. But in terms of how it actually works, I wouldn't have done it. Some residents are so frustrated with the situation that at meetings, they demand the removal of the heat pumps, insisting they can manage without them'* (#01).

The visited cooperative members recognised the importance of effective crisis management in maintaining community energy infrastructure during the crisis and their agency in a situation of weak common activity. In one coal-based cooperative, which introduced fuel stacking and carried out minor renovations (Table 4), the manager noted: '*The residents who have a say are satisfied—they even joke that they'll build a monument in my honour*' (#04). The other said: *'And when I mention that I'm already over 70 years old and should rest, it's interesting—who will let you go, who will allow you?'* (#03), which suggests that there are no other willing people to take care of managing the cooperative and she is doing it more out of a sense of social duty than for different reasons: even in a situation of debt left by the previous cooperative board (Table 4). However, in another cooperative that replaced coal stoves with heat pumps just before the crisis, the board member highlighted the extensive efforts made to prepare the community for the transition: *'I arranged a meeting with the housing cooperative members which did that before, and we sat down and discussed the costs... the board was divided, but when we started visiting sites, showing people around, they began to come around'* (#02). Thanks to these measures and additional retrofitting activities, the cooperative successfully avoided coal shortages and maintained fees at a socially acceptable level.

Table 4. Attitudes, approaches and dominant strategies in visited housing cooperatives

#	Dominant attitude	Actions	Approach				Dominant strategies	Heating sources	Situation
			1	2	3	4			
01	Reactive	Increase in service fees, seeking external help	x		x		External attribution, justification, concealment	heat pumps and photovoltaics	failure
02	Proactive	Energy transition, suspension of other investments, mobilising and educating	x	x			Justification, external attribution, self-promotion		success
03	Reactive and collaborative	Increase in service, negotiations on the energy market, expecting solidarity, getting into debt	x			x	Apologies, external attribution, justification	coal	failure
04	Proactive and collaborative	Increase in service fees, increase energy efficiency, energy transition (fuel stacking), expecting solidarity	x		x		Justification, selectivity, concealment	coal and wood	success

Note: Approaches: 1 – crisis attribution; 2 – resourceful management; 3 – deliberate silence; 4 – others.
Source: Own elaboration based on administrative data and fieldwork.

These examples suggest that the type of heating source is not always the sole determinant of a crisis; equally important is the leadership role in making socially responsible decisions for the collective energy welfare. The severity of the crisis is thus shaped by factors such as local governance stability, the ability to mobilise external resources, and the practice of regular communication and collective problem-solving. Cooperatives that make hasty decisions about changing their energy source within a common resource pool may face reduced flexibility or even a withdrawal from the common infrastructure (#01). It should also be considered that inertia or a lock-in is further reinforced by an ageing population and the associated reluctance to invest in new technologies (#03), financial barriers—including high technology and credit costs—as well as the state policies that inadequately support the development of decentralised energy systems (#04). Consequently, structural problems of rural housing cooperatives often impede collective actions there.

The examples discussed above illustrate the three key factors for managing common resources – institutional supply, credible commitment and mutual monitoring (Ostrom, 1990) – also applicable in the context of energy. Our fieldwork confirms the importance of fostering active engagement among community members, which depends not only on their bottom-up initiative but also on deliberate efforts by the cooperative boards to include them in the resource management process.

5. Discussion: Managing energy as a common good during the energy crisis – a critical overview of the cooperative approach

Housing cooperatives emerge as routine and solo actors, often forced to perform beyond their skills and the capacities of the local stage. Cooperatives managing commons are situated between the pursuit of economic and social objectives. This dual status requires careful consideration. Although housing cooperatives are not public institutions, they also focus on social aims, positioning them as intermediaries between the state, the market, and civil society. They may be subject to audits by sectoral or governmental organisations assessing the appropriateness and efficiency of their operations and their effectiveness is continuously evaluated by the

cooperative members. This dual social and economic priority necessitates impression management, which balances competing interests depending on the political configurations, institutional legacies, and administrative rationalities at play (Bianchi et al., 2024). In that sense, impression management does not conceal failure or manufacture legitimacy – it configures the field of possible actions by shaping expectations, pre-empting contestation, and allocating responsibility in uneven ways.

From a more critical perspective, such cooperative strategies may be reinterpreted as procedural positioning of cooperative boards. In this context, justification and deliberate silence function not as explanations or as means of avoiding uncomfortable topics, but as strategic tools for navigating conflicting interests and a reluctance to take sides in the tensions that the commons seeks to mediate. In the case of approaches such as resourceful management, which highlight collective action, they may initially appear promising, yet often reproduce underlying hierarchies of expertise and authority. In the case of rural cooperatives, deliberate silence was more likely driven by the need to address flawed top-down regulations and secure support for the housing cooperative board decisions, rather than by a desire for joint reflection on housing costs and the energy crisis. In this context, visions of the commons are more pragmatic and individual problem-solving oriented (Arbell, 2023) rather than rooted in members' active participation in the everyday life of the cooperative (Valitutto and De Souza Lopez, 2024). These dynamics tend to prevail particularly when grassroots community engagement is weak and the evolution of commons-oriented practices is at risk of being absorbed into managerial logics or reduced to symbolic inclusion (Bianchi, 2025). Even in cases where cooperative boards create space for horizontal forms of mobilisation, engagement remains selectively structured by board initiative rather than through deliberative co-governance. Thus, even well-intentioned commoning practices can become proceduralised and narrowed when embedded in asymmetric governance relationships.

The rural cooperatives offer relatively few incentives to govern energy as a common-pool resource. Commons literature refers to incentives as 'rewards and punishments that individuals perceive to be related to their actions and those of others' (Vitale 2010, after: Ostrom et al. 2002) in various forms: monetary and non-monetary, direct and indirect. In the most typical scenario, these were additional funds (the coal allowance) provided by the state, which residents could transfer to the housing cooperative's account to help reduce the cost of fuel procurement (an incentive). However, some residents did not comply with this arrangement, forcing the cooperatives to take out loans. Consequently, the repayment of these loans, including interest, was ultimately imposed on all residents (a penalty). Impression management strategies present and constitute how these incentives are structured by shaping expectations, reallocating responsibility, and determining the reputational costs of action or inaction. Under such conditions, the energy crisis served as a trial of how rules set by various communities were defined and applied, as well as a test of trust and obedience.

In numerous instances, the outcome of this test was far from favourable, which can also be evidence of incomplete and discontinuous governance (Le Galès, Vitale, 2018), undermining the community's overall resilience. Therefore, cooperative actors perform primarily for social duty and recognition rather than compensation; thus, there is no hard pressure to act except for the responsibility towards the fate of the local community. The rural housing cooperatives function in an environment marked by episodic interventions, jurisdictional ambiguities, and under-resourced intermediaries. In such contexts, impression management should be interpreted not simply as a rhetorical device but as an institutional arrangement wherein cooperative boards seek to navigate opaque expectations, shifting responsibilities, and complicated political economy between the state and energy market operators. This approach draws attention to the procedural fragility of local governance regimes and the temporal irregularity of state engagement, constraining the collective management of energy as a common resource in rural housing cooperatives.

Conversely, our results highlighted that structural deficits could lead to extreme situations, such as suspending hot water delivery, forcing individual heating in each apartment, or drastic price increases, potentially forcing residents to move out. Unexpectedly, this energy crisis hit mostly the coal-based cooperatives, traditionally perceived coal as the most accessible energy carrier and a 'bedrock of national development' (Kuchler and Bridge, 2018), proving that sudden disruption in supply chains (Carmona and Dąbkowska, 2024) combined with faulty redistribution patterns can weaken institutions and household budgets. However, in our situation the current state results from long-standing misrecognition of the rural housing cooperatives situation in Poland, experienced the collapse of state collective farming in the 1990s, high unemployment at the turn of the century, and mass migration in the 2000s (Błąd, 2022) – which led to a reduced number of active members capable of initiating change (Budyta-Budzyńska, 2017). Therefore, these outcomes should not be seen as failures of motivation but rather adaptive responses to meso- and macro-level constraints, including poor financial conditions of the overall areas, a lack of advocacy, insufficient financial and advisory support, and a general failure to acknowledge the role of rural housing cooperatives as heating communities and intermediaries crucial for ensuring local energy security.

We also did not find evidence that the crisis accelerated the massive transition towards modern and clean energy technologies – we instead observed more often fuel stacking strategies, also visible in other European countries during the crisis (Saffari et al., 2013; Stojilovska et al., 2023) and among individual households in Poland who feared dependence on gas (Frankowski and Tirado-Herrero, 2021). This situation demonstrates that the cooperatives primarily sought to defend themselves from the costly and inefficient exclusion of individual users while striving to maintain the common energy resource, aligning with the overall approach to managing the common-pool resources. This often contrasts with policymakers' wishful thinking during crises, who point to various, usually novel and unproven, technologies as pathways to energy independence (Grossman, 2019). Yet, these solutions frequently fail to align with the immediate needs of local communities.

Finally, our study highlights the limitations of the energy as a commons framework, which requires careful contextualisation. This approach works exclusively in analysing thermal energy communities where a self-organised group collectively governs a shared resource, establishing its own energy production and distribution rules. Importantly, such a resource does not have to be locally produced—biomass or biogas, but may also include externally sourced fuels such as coal. When fuel availability is constrained in crisis conditions, treating energy as a common-pool resource offers a valuable entry point for understanding how collective governance can support more effective and equitable resource management. In these situations, community members are not left to navigate scarcity individually but instead mobilise shared capacities to mitigate its impact. However, it is not the case of larger housing cooperatives, particularly those located in urban settings and dependent on external heat providers, as they lack the collective control and autonomy that this framework presupposes.

6. Conclusions

The study examined how rural housing cooperatives in Poland responded to the energy crisis of 2022. This crisis caused a sharp increase in energy prices and significant fuel shortages, particularly affecting cooperatives reliant on coal for heating. Using dramaturgical sociology frameworks, we analysed these cooperatives' strategies to respond to the crisis and manage their image. Based on an analysis of 215 annual reports, we explored how cooperatives framed their efforts to cope with the energy challenges while maintaining their role as intermediaries and providers of essential heating services.

Our findings indicate that most cooperatives adopted defensive strategies to justify their actions. These strategies, including crisis attribution and deliberate silence, allowed them to shift the narrative to external factors beyond their control, such as rising coal prices and inflation, due to their procedural positioning. Meanwhile, fewer cooperatives showcased proactive efforts, employing resourceful management strategies and activities, including negotiating better energy rates and implementing energy-saving measures. Many of these cooperatives demonstrated resilience and creativity despite their limited resources, but also reproduced underlying hierarchies of expertise and authority.

Several limitations affected our paper, but we employed various strategies to address them. First, the variability and quality of the data were a challenge, as the length and structure of the reports analysed varied significantly. Some cooperatives provided detailed narratives, while others offered only minimal information. To address this, we selected those with the most informative reports and applied qualitative analysis techniques to extract key themes. Second, the subjectivity in interpreting qualitative data was mitigated by employing AI tools to classify the strategies used by cooperatives. Although these measures reduced bias, complete objectivity remains a challenge. Third, while the sample size of 215 cooperatives was substantial, it still limited the scope of the analysis. We focused on this smaller sample to ensure data reliability and conducted fieldwork verification to engage with the people behind the reports. Lastly, using automated tools like Chat GPT-4 helped us standardise our analysis, but these tools are not without limitations, particularly in capturing local context in reporting. To address this limitation, we will share on request a database of the analysed report’s text with cooperative strategies and attitudes to reproduce or further develop the study in the future.

We identified several avenues for future research. First, understanding the preferences of multi-family building residents regarding energy transitions and their inclination toward cooperativeness requires more attention. Investigating how residents' attitudes towards energy efficiency, renewable energy sources, and collective action evolve in response to changing prices can illustrate the potential for enhancing cooperative resilience. This research could examine what motivates or hinders common energy initiatives and how cooperative identity influences energy-related decision-making processes within communities. Second, the fair distribution of the costs and benefits of energy transitions in housing entities deserves more attention. Quantitative models could examine this issue to identify equitable mechanisms for sharing the financial burden and rewards associated with transitioning to sustainable energy sources. Such models could help design strategies that balance individual and collective interests, ensuring that all cooperative members, regardless of their financial capacity, benefit from energy-saving measures and renewable energy investments while minimising disparities within the cooperative community. Third, a broader fieldwork verification of internal housing cooperative decision-making mechanisms is needed to complement the approach that reviews cooperative reports, as the approach in this paper mainly reveals only the ‘official’ and unilateral version of the story. Therefore, we argue for more ethnographic on-site research in housing entities experiencing energy transition or coal lock-in to fully understand their strategies, attitudes, and collective behaviours.

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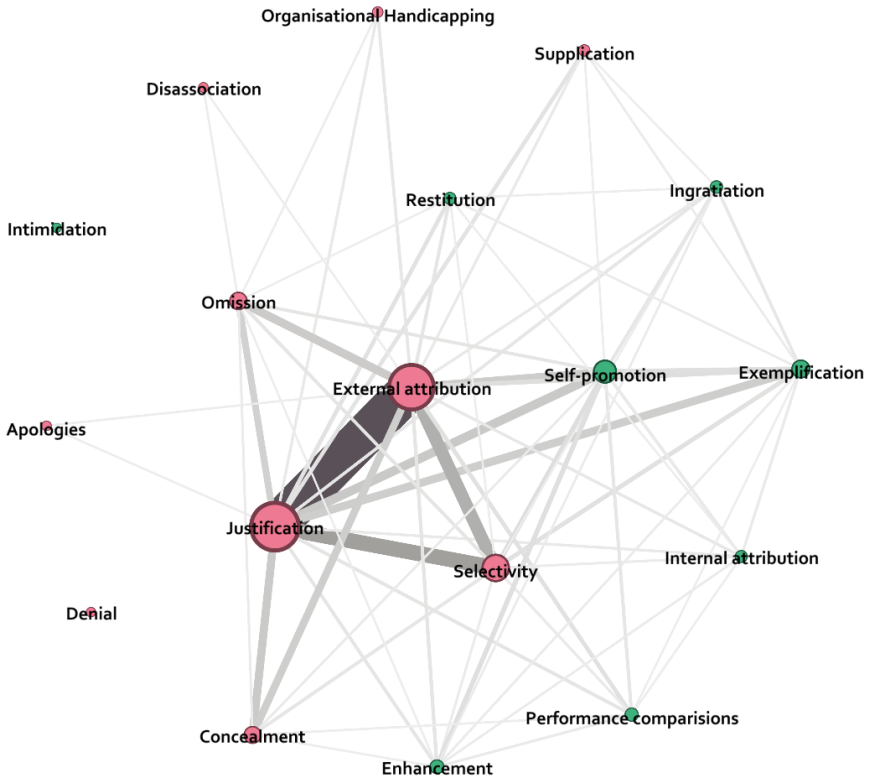
Appendix 1 – Impression Management Strategies

A1.1 Chatbot GPT-4 Prompt

We have 18 types of strategies of impression management strategies: apologies [An organization accepts responsibility for a negative event and expresses remorse], concealment [An organization downplays transgressions by giving them less prominence], denial [An organization denies its role in a negative event], disassociation [An organization distances itself from a negative event], Enhancement [An organization accentuates the desirability of a positive event for which it was at least partially responsible], Exemplification [An organization projects an image of integrity, social responsibility or moral worthiness], External attribution [An organization attributes negative outcomes to external events or chance factors], Ingratiation [An organization flatters an audience or expresses similar beliefs and attitudes to the audience], Internal attribution [An organization attributes positive events to its own actions], Intimidation [An organization emphasizes its power, dominance, and willingness to hurt those that oppose it], Justification [An organization describes an external cause for its action], Omission [An organization withholds negative information from an audience], Organizational handicapping [An organization presents a task as being so difficult to complete, that it should be excused for not completing it], Performance comparisons [An organization attempts to portray strong performance using low prior-period benchmarks], Restitution [An organization offers compensation to victims of a negative event], Selectivity [An organization highlights facts that portray it in the best possible light], Self-promotion [An organization promotes its competence, talents and capabilities], Supplication [An organization attempts to appear weak and in need of assistance]. Please classify the dominant three types of strategies in the current text (from the most to the least probable) and provide reasoning.

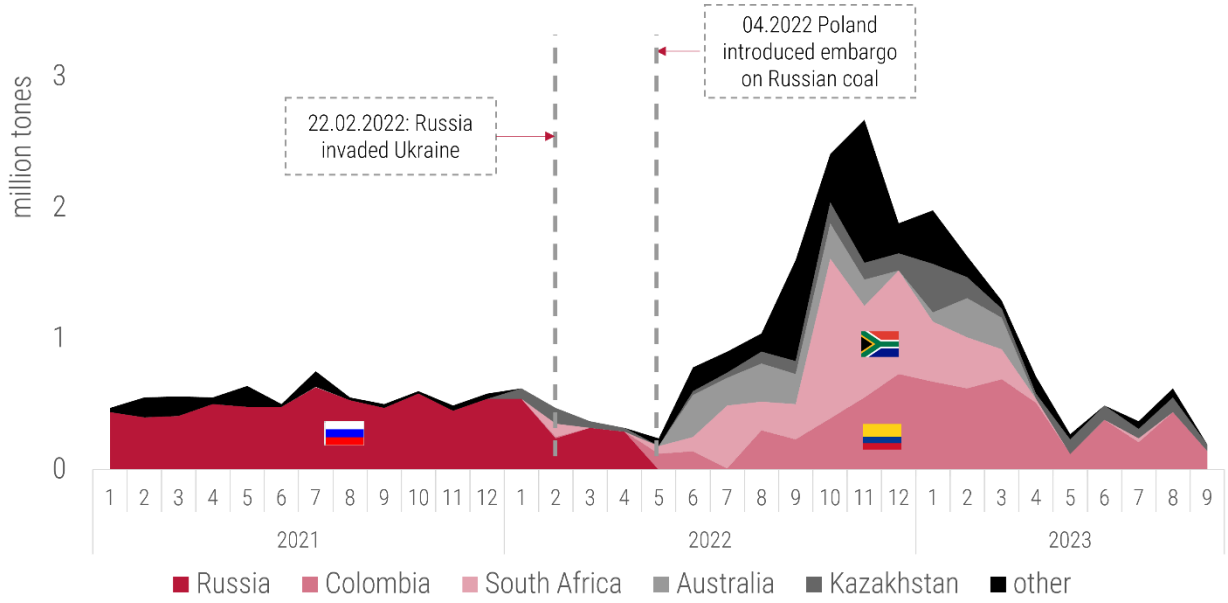
A1.2 The most popular impression management strategies and their most popular connections



Note: red colour: defensive strategy; green colour: assertive strategy. The node size of the strategy is the frequency of the strategy as a dominant one. The edge size is a frequency of co-occurrence within the three most accurate strategies. Source: Own elaboration based on registry data.

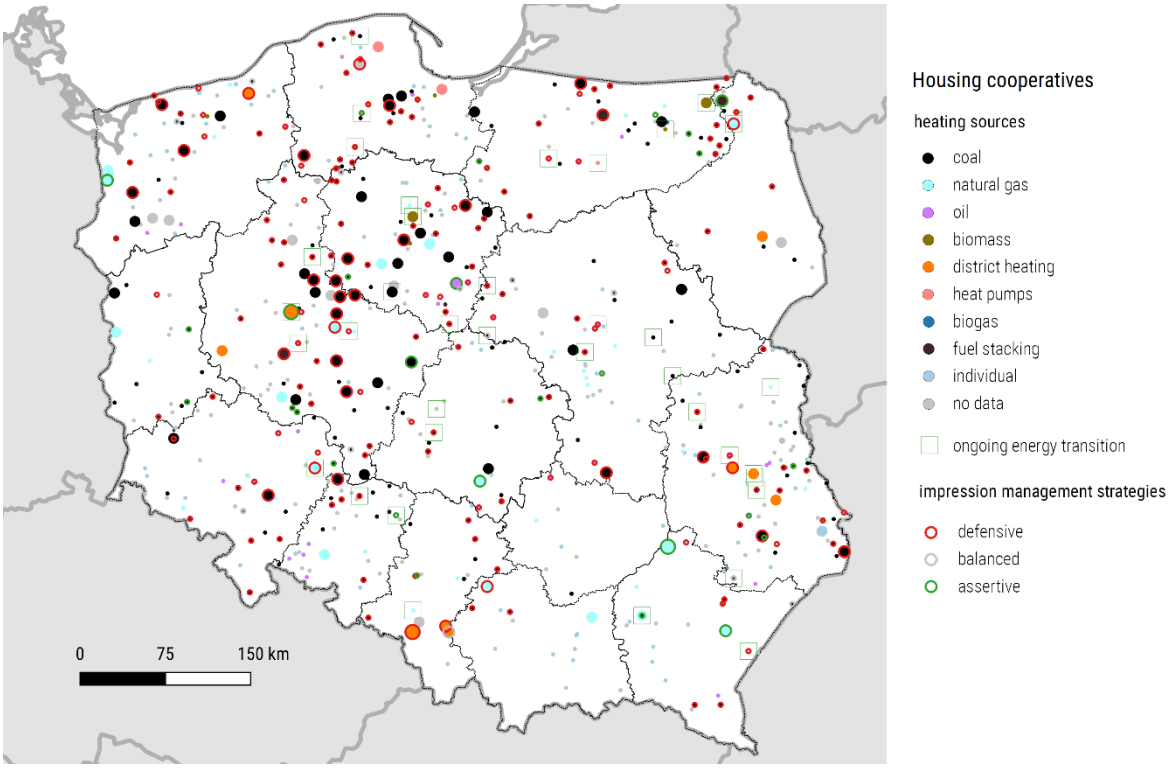
Appendix 2 – Selected statistics on the energy crisis and housing cooperatives in Poland

A2.1 Import of coal to Poland, 2021-2023



Source: Own elaboration based on energy.instrat.pl

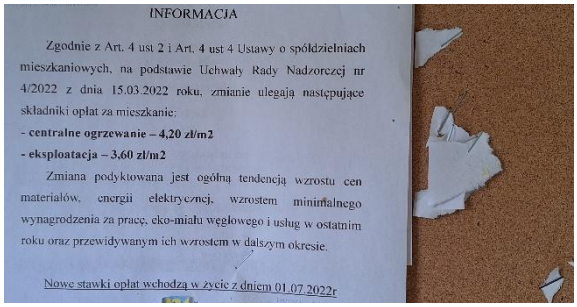
A2.2 Spatial distribution of rural housing cooperatives in Poland broken by heating source and impression management strategies



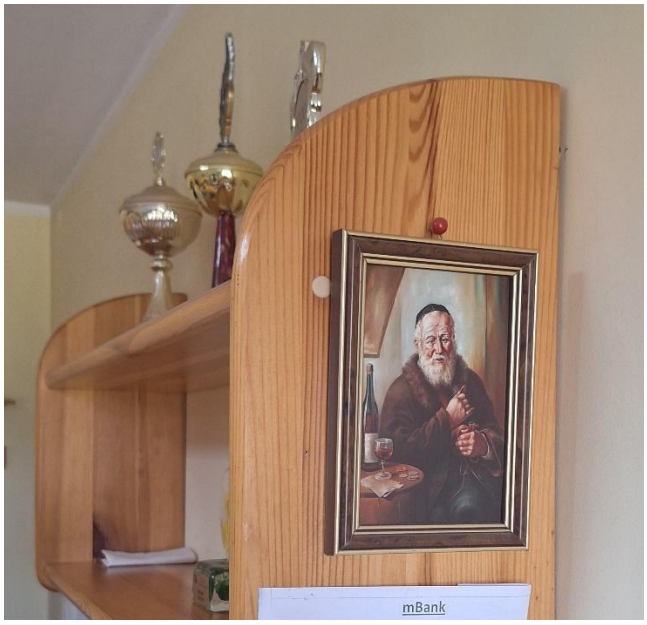
Source: Own elaboration based on administrative data (Rejestr.io).

Appendix 3 – Photographic documentation

A3.1 Information for the cooperative citizens regarding increasing energy costs in a common space



A3.2 Photos of successful cooperatives with their heating modes and from headquarters



Source: Fieldwork photos.

www.ibs.org.pl