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# AIR AND CLIMATE PROTECTION IN POLAND AND LOCAL EXPENDITURE – STUDY OF THE KAZIMIERSKI POVIAT

## ЗАХИСТ ПОВІТРЯ ТА КЛІМАТУ В ПОЛЬЩІ ТА МІСЦЕВІ ВИТРАТИ – ДОСЛІДЖЕННЯ КАЗИМЕЖСЬКОГО РАЙОНУ

Air and climate protection in Poland is one of the hotly discussed topics today. The climate neutrality declared by the European Union countries by 2050 will be particularly difficult to implement in this country without limiting carbon dioxide emissions from local sources, such as households. The article focuses on investments of municipal authorities in air and climate protection. They are expensive and, given the multitude of local needs, are still slowly implemented by local authorities. The effect of such a situation is, unfortunately, a slow transformation of the Polish local government space into an environment that is friendly to residents and the climate. The work analyzes the investment activity of local authorities in the field of air and climate protection in the Kazimierz district located in the Świętokrzyskie Voivodeship. These considerations are based on the results of analyzes of local documents, financial statements and information from public statistics.

**Key words:** low emissions, local spending, air and climate protection, energy transition, low-carbon economy.

Захист повітря та клімату в Польщі нині є однією з гарячих тем. Кліматичну нейтральність, проголошену країнами Європейського Союзу до 2050 року, буде особливо важко реалізувати в цій країні без обмеження викидів вуглекислого газу з місцевих джерел, таких як домашні господарства. У статті йдеться про інвестиції міської влади в охорону повітря та клімату. Вони дорогі, і, враховуючи безліч місцевих потреб, місцева влада все ще повільно впроваджує їх. Наслідком такої ситуації є, на жаль, повільне перетворення простору польської місцевої влади у середовище, дружнє до мешканців та клімату. У роботі аналізується інвестиційна діяльність місцевих органів влади у сфері охорони повітря та клімату в Казимєжському районі Свентокшиського воєводства. Ці міркування трунтуються на результатах аналізу місцевих документів, фінансових звітів та інформації з державної статистики.

**Ключові слова:** низькі викиди, місцеві витрати, захист повітря та клімату, енергетичний перехід, низьковуглецева економіка,

#### Introduction

Environmental and climate protection is a promising branch of the development of the Polish economy. Planned investments in this sector are to contribute in coming years to create at least tens of thousands of jobs. At the same time, Polish energy sector is to transform, as it is strongly based on the "carbon foundation". It seems, however, that energy transformation of Polish companies is proceeding faster than that observed in Polish cities and towns. Apart from radical examples of protective measures for air and climate introduced in Krakow a few years ago, it is still landscape of the Polish countryside in winter, they paint views of the smoking chimneys of domestic hearths, corresponding for dominant part of particulate matter in the Polish air.

What is worse, the tasks aimed at air and climate protection seem to exceed not only financial possibilities of households. They are also costly for local governments. In the long run, the benefits of

climate protection investments turn out to be higher than the outlays incurred for them [26]. Environmental and social effects of taking them, however, seem to take precedence over these in the form of cash flowing into local budgets. When looking for legal foundations for environmental activity of Polish local governments, it is worth referring to Constitution of the Republic of Poland [3]. In this case, Article 86, which obliges every citizen to do so.

At the same time, it emphasizes the responsibility of individuals for all their actions which worsen it. In the matter of environmental protection, basic law relates even more strongly to public authorities operating in Poland. They are imposed in Article 74 the duty to care for its condition and protection. In particular, it is about taking measures to protect citizens and future generations against resulting threats from discrepancy between economic development and environmental protection requirements [10; 15].

This attempt to completely or partially eliminate threats to human life and health, which are caused by environment, is most often known as ecological safety [2]. It is connected with principle of sustainable development, treated as such a socio-economic development in which process of integrating political and economic activities takes place and social, maintaining natural balance and durability of basic natural processes, in order to guarantee possibility of meeting basic needs of individual communities or citizens, now and in future [14]. Placement of this principle in Poland Environmental Protection Law is the same complement to task of public authorities and citizens with regard to its implementation.

In this situation, sustainable socio-economic development of Poland without the issue of air and climate protection seems impossible. Hence growing need to transform Polish economy and social life in such a way that they fit more closely into the international discussion on global warming. This, in turn, is not only the "fashion" of recent years, but started already in late 70's of the 20th century. Then it was United Nations that organized a climate conference for the first time, starting a global discussion on subject that continues to this day. As a result of cooperation under United Nations Environment Program (UNEP) and World Meteorological Organization (WMO), was established in 1988 Intergovernmental Panel on Climate Change (IPCC) [8].

First IPCC report was reason for convening of conference in Rio de Janeiro on 3-14 June 1992, which went down in the history of international relations as the "Earth Summit". First global action program, known more widely as the so-called Agenda 21 [4; 6]. Under Polish law, climate action was to bring about accession to the New York Convention on Climate Change [25]. However, problems of the Polish economy in the 90s meant that Kyoto Protocol [12], ratified in 2005. Progress in Polish policy of air and climate protection was already hampered by a specific lack of translation of adopted international documents into climate action in local space. They were undertaken in enterprise sector and in economy that started the transformation processes. Discussion on role of local communities in these activities, however, appeared more widely in rural and urban-rural municipalities much later, only around 2015 [24].

Recent years have brought almost universal local discussions in Poland on subject of air and climate protection. Unfortunately, difference between will to act and possibility of financing costly climate investments remains a problem for local authorities. Government-initiated activities and programs offer some hope, but their dissemination remains a problem. Polish municipalities more and more often try to focus their needs in field of air and climate protection within objectives and priorities of their own strategic documents

(local strategies). Unfortunately, real effects of planned activities are often very disappointing, especially in rural communes. Financial difficulties of local government authorities often result in marginalization or omission of climate issue in local politics, and consequently also leading to its' downplay by inhabitants.

First attempt to create a common climate policy in European Union (EU) was initiated in 2000, by the European Climate Change Program (ECCP). However, it was not a tool radical enough to force countries to act. He put emphasis mainly on promoting good ecological practices. Only the climate package, proposed by European Commission (EC) at the end of 2008 and binding until the end of 2020, became much more concrete. Unfortunately, its assumptions in Poland have not been fully achieved. The vision of reducing flow of European funds environmental activities for Polish selfgovernments that do not undertake planned activities to create a low-emission economy turned out to be more motivating here. In effect, in Polish municipalities in 2015–2017 there was a rash of the so-called low-emission economy plans, which quickly revealed scale of the existing and increasing negligence of local authorities in field of air and climate protection over the years. These documents, while being in line with the objectives of EU climate policy, contrary to appearances, have not become fully compatible with the investment policy implemented by the authorities of Polish municipalities in this area [23].

Investments polish local governments in air and climate protection

The problem of implementing provisions of lowemission economy plans adopted by Polish municipalities seems to have a diverse background. They are not documents, that are required to be fully implemented under any provisions of national law. Plans and local strategies are such a special category of documents that their binding force and restrictions on implementation are usually determined by their author himself. Latter, while maintaining a safety margin, rarely decides to impose sanctions related to failure to comply with their provisions [13]. Hence, the plans made by authorities of Polish communes often set ambitious goals, as they are generally not binding on their authors by acts of local law [27]. Rather, they organize certain activities of local government administration, supporting the process of organizing and harmonizing activities and resources [11]. Finally, they become a tool that creates opportunities for obtaining European funds, without any real driving power in this regard.

Guidelines of Provincial Funds for Environmental Protection and Water Management in Poland indicate that plans for a low-emission economy in municipalities should organize activities of these local governments, to reduce CO<sub>2</sub> emissions. Unfortunately, they say little about financial support for this type of activity. The lack of guarantees of wider government support

for local governments planning ambitious activities for protection of air and climate in Poland seems to be a necessary problem in this situation. We can already see that many plans for a low-emission economy in Polish municipalities assume expenditure on energy transformation that will exceed modest financial capabilities of these units. You can see it especially well in case of small rural and urban-rural communes, where scattered buildings or limited income of residents' cause difficulties for local authorities in the implementation of local investments favoring air and climate protection. The lack of access to natural gas by inhabitants of some municipalities seems to be acute, without which a quick departure from burning coal and wood in home furnaces will be difficult and long-lasting. This is also overlapped by other priorities of local government's investment policy, on which it is easier for local leaders to capitalize on political capital. Education, transport and health care have been consuming most of the funds of Polish communes for years, leaving little funds for investments in other areas. Moreover, in absence of a sufficient pool of funds allocated to investments in local budgets, it is difficult to apply for domestic subsidies and foreign investment subsidies for energy transformation. All the more, central authorities should make more efforts to learn about current barriers hampering local government investments aimed at air and climate protection. Therefore, it seems necessary to create new legal solutions enabling local authorities to apply more widely for funds for the energy transformation on the most favorable terms.

Expenditures on air and climate protection in the Kazimierski poviat

The above-described problems and challenges of communes in Poland related to air protection and climate, best illustrated with a fragment of the local self-government reality. The communes of the Kazimierski poviat will serve as a case study. Its area is almost entirely located within Zapadlisko Przedkarpackie, in the southern part of the Świętokrzyskie voivodship. Due to special environmental values of these lands, about 18.3% of its area is covered by various forms of nature and

landscape protection, including protected areas that are part of the *Nature 2000* ecological network. The poviat is characterized by lowest forest cover in the region. Forests cover only 2.8% of his area, amounting to 422 km² [21]. Kazimierski subregion is adjacent to the north with Busko and Pińczów poviats as well as miechowski, proszowicki, Tarnów and dąbrowski poviats being part of the Małopolska region. The poviat lands have traces of settlement dating back to the 4-th millennium BC found at the archaeological sites situated there: Stradów, Jakuszowice, Zagórzyce [9]. We will also meet there a number of monuments of religious architecture, wooden and brick [1].

Currently, there are five communes within the poviat: Bejsce, Czarnocin, Kazimierza Wielka, Opatowiec and Skalbmierz [22]. The largest is the urban-rural Kazimierza Wielka, which is the administrative center of the district. Apart from that, only Skalbmierz has city rights [21]. The economic and demographic differentiation of the poviat communes is presented in Table 1.

Table 1 shows that the powiat local municipalities were formed small local communities. This made it difficult for the authorities to collect own funds, which could be a source of financing investments aimed at air and climate protection. At the same time, you can see a large population center in the Kazimierza Wielka commune. At the end of 2018, it was inhabited by 47.8 % of the inhabitants of this sub-region. The kazimierski poviat in 2010-2018 was an area affected by phenomenon of depopulation of the population. It affected Kazimierza Wielka the most, the population of which fell by 784 people. The population of commune decreased by 4.61 % over 9 years. At the same time, it accounted for over 40% of population decline in scale of the entire kazimierski poviat. Skalbmierz, Bejsce, Czarnocin and Opatowiec recorded smaller losses. Communities of the last two local municipalities shrank to less than 4 000 residents. On the other hand, economic activity increased. Out of 243 new private entities established in this area at that time, the largest number appeared in Bejsce, Skalbmierz and Kazimierza Wielka.

Table 1
Communes of the Kazimierski poviat – demography and economic activity

Communes	Area in km <sup>2</sup>	Population by p	lace of residence	Private sector entities		
Communes	Area iii kiii	2010	2018	2010	2018	
Bejsce	57	4 330	4 031	111	178	
Czarnocin	70	4 079	3 810	150	172	
Kazimierza Wielka	140	16 994	16 210	866	927	
Opatowiec	69	3 516	3 298	146	168	
Skalbmierz	86	6 886	6 502	271	342	
POVIAT	422	35 805	33 851	1 544	1 787	

Source: Own study based on information from the Statistical Office in Kielce.

Investments aimed at air and climate protection appeared relatively late in communes of Kazimierski poviat, only in 2015. They did not cover all local communities. They coincided with adoption of subsequent low-carbon economy plans. The authorities of the Bejsce commune implemented one in June 2016 [16]. Successively similar steps were taken under resolutions of: Kazimierza Wielka [20], Opatowiec [18] and Czarnocin [19]. It was only in February 2017 that such a plan was adopted by Skalbmierz [17]. The analysis of these documents shows a rather conservative definition of the challenges of the local climate policy. Much attention was paid to anticipated sources of their financing, emphasizing the role of external funds. However, mere translation of the provisions of low-emission economy plans of communes of Kazimierski poviat into investment expenditure in this area turned out to be small. Their amounts are presented in Table 2.

The amounts of expenses presented in table 2 indicate leaders and outsiders on their implementation among communes of the kazimierski district. Local authorities in commune of Czarnocin allocated the most local funds for the above-mentioned activities. Their implementation took place only in the years 2017–2018. None of the municipalities undertook this type of activity before 2015. Only municipalities of Bejsce and Kazimierza Wielka implemented it

regularly since this year. This confirms the hypothesis that there was a significant divergence between investments at that time in air and climate protection, and assumed planning objectives in this regard. Three out of the five communes of the Kazimierski poviat, they did not undertake any expenditure for this purpose before 2017. Skalbmierz fares poorly here, in which these authorities allocated only 5 000 PLN. It was only in 2018 that there was a visible increase in municipal investment spending on air and climate protection. Their distribution among communes is presented in Table 3.

Table 3 shows that the largest stream of funds for climate investments in 2018 came from communes of Czarnocin and Opatowiec. Both local governments turned out to be leaders in this type of investment expenditure in the entire period of 2010–2018. Interestingly, Kazimierza Wielka commune, inhabited by the largest number of inhabitants in the poviat, did not treat these expenditures more as a priority, spending only 15.96% of funds in the entire poviat for this purpose. This issue is specified in Chart 1.

The above-presented domination of the commune of Czarnocin and Opatowiec seems beyond doubt. Nevertheless, the overall sum of investment expenditure of all municipalities of the county "per capita" in 2010–2018 is still quite modest. It is illustrated in Chart 2.

Table 2
Investment expenditures of the Kazimierz district communes on air and climate protection in 2010–2018
(PLN thousand)

Commune/Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bejsce	-	-	-	-	-	14.6	6.3	24.1	8.6
Czarnocin	-	-	-	-	-	-	-	11.3	364.5
Kazimierza Wielka	-	-	-	-	-	15.4	71.9	48.0	1.8
Opatowiec	-	-	-	-	-	-	-	-	287.4
Skalbmierz	-	-	-	-	-	-	-	5.0	-
POVIAT	_	-	_	-	_	30.1	78.2	88.4	662.3

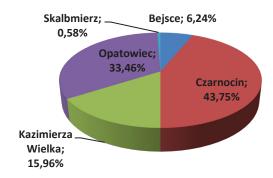
Own study based on reports on the implementation of budgets of the municipalities of the Busko poviat for the years 2010-2018, data from the Regional Audit Chamber in Kielce (access: 11/02/2021).

Table 3 Distribution of investment expenditure of the communes of the Kazimierz district on air and climate protection in 2010–2018 (%)

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Communes/ Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bejsce	-	-	-	-	-	48.67	8.03	27.25	1.29
Czarnocin	-	-	-	-	-	-	-	12.81	55.03
Kazimierza Wielka	-	-	-	-	-	51.33	91.97	54.28	0.23
Opatowiec	-	-	-	-	-	-	-	-	43.45
Skalbmierz	-	_	-	_	-	_	-	5.66	_

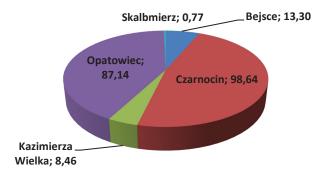
Source: Own study based on the data in Table 2.

Chart 1. Distribution of investment expenditure on air and climate protection in the Kazimierski poviat in 2010–2018 (%)



Source: Own study based on the data in Table 2.

Chart 2. Investment expenditures of communes of the Kazimierz poviat on air and climate protection "per capita" in 2010–2018 (PLN)



Source: Own study based on the data in Table 1 and 2.

Chart 2 illustrates that "per capita" investment outlays for air protection and climate in 2010–2018 turned out to be not very impressive. For comparison, it is worth mentioning municipality of Busko Zdrój, located in neighboring poviat, where expenditure of the same type per capita was then almost PLN 1 243.89 PLN. The low investment expenditure of local authorities on air and climate protection in the Kazimierz district does not seem to be only problem in carrying out a quick energy transformation of this area. It's almost complete absence of a natural gas distribution network may also be a brake on it in the Kazimierski poviat. This translates into an almost complete lack of use of this fuel by residents as a substitute for coal and wood. How common was gas exclusion of inhabitants of this area until the end of 2018 is shown in Table 4.

Table 4 shows that use of natural gas by the inhabitants of the communes of Kazimierski poviat in 2010–2018 was negligible or even absent. Thousands of inhabitants of subregion could not therefore use this source of energy for heating purposes. Availability of this fuel also remained extremely low in urban areas, in

densely built-up areas where the risk of accumulation of suspended dust concentrations from home furnaces is many times higher than in rural areas. Kazimierza Wielka commune, inhabited at the end of 2018, for over 16 thousand residents, did not use the access to the gas network almost completely. This shows a huge investment gap that in 2010–2018 was still heavily underinvested by local authorities.

### Conclusions

Air and climate protection in Poland, as well as accompanying energy transformation on a local scale, face many difficulties. Local authorities are lacking both financial resources, costly climate investments, and determination in pursuit of goals of low-emission economy plans. There is also a lack of more developed cooperation between municipalities, the fruit of which could be joint applications for external subsidies or coordination of mutual activities. Also, central government cannot decide until the end how to accelerate energy transformation in the local space. On the one hand, they reach out to inhabitants, offering them more and more diverse forms of financial support.

Table 4

Natural gas consumption by the inhabitants of the kazimierski poviat in 2010–2018 (%)

Commune/Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bejsce	-	-	-	-	-	-	0.1	0.1	-
Czarnocin	-	-	-	-	-	-	-	-	-
Kazimierza Wielka (w)	-	-	-	-	-	-	-	-	-
Kazimierza Wielka (m)	-	-	-	-	-	-	0,1	-	-
Opatowiec	-	-	-	-	-	-	-	-	-
Skalbmierz (m)	-	-	2.3	2.4	2.4	2.3	2.3	2.3	2.3
Skalbmierz (w)	-	-	0.1	0.1	0.1	0.1	0.1	0.1	-
POVIAT	-	-	0.1	0.1	0.1	0.1	0.1	0.1	-

(m) – city, (w) – rural area, Source: Own study based on the Local Data Bank, https://bdl.stat.govh.pl/BDL/dane/podgrup/teryt (acces: 11/02/2021).

On the other hand, they have a conservative approach to issue of providing local governments with additional own revenues, with the condition of allocating them for investments that protect local air and climate.

Polish municipalities still seem to follow path of local climate policy a bit in the dark, on the one hand, making quite ambitious declarations about its goals, and on the other hand, often hardly investing in their implementation. The analyzed case of five communes of Kazimierski poviat only confirms last thesis. At the same time, it shows that organization of local air and climate protection policy is a new task for many

local authorities, often still marginalized in terms of investments.

Despite growing concern of local authorities over climate issues observed in recent years, many obstacles stand in their way, overcoming which will require a lot of persistence. It seems necessary to introduce regularity in expenditure on local investments aimed at air and climate protection. The symbolism of supporting climate policy from municipal budgets, with amounts not exceeding several thousand PLN, should also disappear. These goals seem not to be far from being achieved as long as they are fully understood by local authorities.

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