

Article

Sustainable Development, Energy Transition, and Climate Challenges in the Context of Gender: The Framework of Gender Determinants of Environmental Orientation in Poland

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Abstract: How does gender affect attitudes towards ecology? This question is of particular interest in a society where conservative and populist power elites perceive the concepts of “gender” and “ecology” as manifestations of “foreign” cultural influences. In turn, the dependence of the Polish energy system on coal forces us to look for various social factors that may support energy transition and the principles of sustainable development. The article outlines the results of computer-assisted telephone interviewing (CATI) research on a representative sample of Polish society composed of 1,001 people and analyses the gender differentiation of attitudes towards the policy of sustainable development in Poland. The results presented in this article clearly show that women in Poland constitute an important support for ecological activities and energy transition. This is also the case with the entire progressive vision of politics: Women have become its main driver and an opportunity for change.

Keywords: climate change; development; ecology; energy transition; gender

1. Introduction

Poland is a country whose energy system is still dependent on coal and the Polish government is the only government in the European Union (EU) to have rejected plans to achieve climate neutrality by 2050 [1]. Nevertheless, the country has to face the decarbonisation process. For this reason, the climate and energy policy to be implemented in Poland will have an impact not only on the quality of life of its residents, but also on the possibility of creating and financing the Green New Deal across the EU under the conditions of the post-pandemic crisis [2]. Thus, discussing climate challenges in the context of gender is particularly interesting given that the same populist government that rejected the goals of climate neutrality is also discrediting women’s equality policy, calling it ‘gender ideology.’ The same right-wing populist media linked to the government that rejects decarbonisation postulates, ridicules climate change, and attacks environmentalists as the “agents” of Western interests interfering in national interests [3], also attacking women’s and LGBT rights as a threat to ‘national tradition’ and the “traditional family” for ideological and cultural reasons [4]. In this approach, sustainable development is threatened in many spheres of social life by the same ideology of the right-wing populist government.

If we agree with the assumption that different individuals and groups relate differently to climate change, due to their situatedness in power structures based on context-specific and dynamic social categorisations [5], it is worth analysing the relationship between gender and the preferred development model in the environmental and energy dimension. In the 1990s, the need for gender-based analyses of electricity consumption was pointed out and it was also postulated that gender should be taken

into account in energy policies at the macro level, including in energy investments, energy imports, and prices [6]. These postulates are still valid, as is the inclusion of gender in analyses of energy saving in apartments [7]. However, it is also necessary to create an analytical framework of the gender perspective in the context of energy transition.

Although this deficit in social sciences has been partially reduced since the time when the lack of sufficient analyses of the relationship between gender and the environment were stressed [8,9], there are still no such analyses in relation to Poland and other Eastern European societies. For these reasons, checking whether the gender indicator rejected by the right-wing populist authorities in Poland influences attitudes towards the government-blocked energy transition and environmentalists' demands is an important contribution to the analysis of factors influencing sustainable development. Considering research conducted in other societies, it can be assumed that the gender factor is not neutral to environmental policy. However, in the case of Poland, it is additionally important to try to explain the causes of gender differentiation in attitudes towards the environment. What social factors play the main role in shaping environmental orientation in Polish society?

The article outlines the results of research on a representative sample of Polish society and analyses the gender differentiation of attitudes towards the policy of sustainable development in Poland.

1.1. Gender and Ecology

When discussing the unequal consequences of climate change for various social groups, attention is paid not only to geographic diversity, class, and age differences, but also to the issue of gender. In the case of gender differences in the context of climate threats, unequal relations in using, accessing, and controlling resources, and in the distribution of benefits, as well as the unequal position of women and men in the aftermath of disasters caused by climate change are emphasised [10]. Analyses of the relationship between gender and climate change highlight the key role of rural women in poor countries in environmental and natural resource management. Hence, it has been concluded that women's active involvement in agriculture and their dependence on biomass energy, makes them key stakeholders in effective environmental management [11] (p. 11). As early as the mid-1980s, the report entitled *The State of India's Environment Report* published in 1985 by The Centre for Science and Environment (CSE) read as follows:

Probably no other group is more affected by environmental destruction than poor village women. Every dawn brings with it a long march in search of fuel, fodder, and water. As ecological conditions worsen, the long march becomes even longer and more tiresome. Caught between poverty and environmental destruction, poor rural women in India could well be reaching the limits of physical endurance [12] (p. 23).

Climate change is too often treated as a problem that requires only appropriate technological solutions. In reality, however, it requires many social and political solutions, as this is not a politically neutral issue. In this sense, it is also not a gender-neutral issue. Social acceptance for specific activities related to energy transition takes place on at least three levels: The market, political, and social levels [13]. While market acceptance concerns investors and project developers, energy suppliers, utilities, and grid owners, as well as electricity consumers, changes in energy policy resulting from climate change require not only the support of institutionalised political actors, but also the acceptance of bottom-up opinions of various social entities. In the civic sphere, it is made up of the attitudes of local communities, entire societies, and also of individual professional groups, social classes, and gender roles, which differ in their position in the social structure and power system.

There are different explanations for the diversity of social attitudes in the context of the environment due to the gender factor. For example, men and women have different models of socialisation and social roles. Scholars referring to the theory of gender socialisation to explain why women are more concerned than men with the challenges of environmental problems [14] indicate that women are more sensitive to the health and safety of members of a social community [15] as a result of different social educational processes:

Each argues that men and women socialised respectively into masculine and feminine identities differ on key beliefs and values that directly influence environmental concern. A strict interpretation

of each argument holds that these beliefs and values—as intervening variables—greatly mediate the relationship between gender and environmental concern [16].

While the theories of gender socialisation emphasise the development of male and female values and identities, concepts referring to the division of social roles stress the importance of the division of tasks, work, and social status that differentiate the position of women and men in society. This trend also includes analyses emphasising the differentiation of wages between women and men, different forms of employment, and a differentiated model of knowledge and trust in science as elements influencing a different orientation towards environmental protection [17].

Regardless of the explanation of differences in the approach to the environment and ecology between women and men, it has been postulated that the gender perspective should be permanently integrated with the structure of the research process in the transdisciplinary research model at all its stages: From formulating a research problem, through its analysis and explaining empirical data up to formulating practical recommendations on a social policy level [18]. Taking account of the gender perspective is also useful when analysing energy policy and energy transition because “energy policy should take gender into account as there exist gendered impact of energy on factors such as fuel poverty and energy saving choices” [19].

Studies of the relationship between gender and climate change in the Global South countries recommend collecting gender-differentiated empirical data in future research [20].

Responding to this recommendation, we show how gender differences in Poland affect the perception of ecological threats and the approach to energy transition. This is important because the term ‘gender’ and its perspective have become entangled in the political context in Poland and evoke enormous emotions. The socio-political system functioning in Poland since 2015, which is a form of right-wing authoritarianism, has divided people and their attitudes according to various binary categories: “Real Poles” vs. “people deprived of the Polish soul”; “Polish tradition” vs. “foreign influences”; “Polish interest” vs. “foreign interests”; “national sovereignty” vs. “submission to the EU; and “national pride” in Polish history vs. “pedagogy of shame” [21]. This black-and-white vision of the world also contrasts the ‘traditional family’ with the concept of ‘gender,’ the use of which in the public space leads to political and ideological conflict.

1.2. Right-Wing Populism and Gender: The Socio-Political Context in Poland

Although the participation of women in the creation of active opposition and protest movements in Poland during the communist period is known [22,23], after the systemic transformation and fall of communism in the late 1980s and early 1990s, women’s movements under the new political conditions still remained in opposition to the new order and aroused controversies. The anti-gender discourse in the public space in Poland was strengthened not only by the nationalist right, but also by the Catholic Church [24,25], which had a strong political influence in Poland. As a result, just a few years after the change of the system, one of the most restrictive anti-abortion laws in Europe was passed in Poland [26] and in the following years, for ideological reasons, access to prenatal tests was limited [27]. Due to the growing influence of right-wing populists supported by the Church hierarchy, in 2013 and 2014, the concept of gender began to function in public debate as a threat to the family and a synonym for moral chaos [28]. The anti-gender campaign launched by the Church and right-wing circles was a form of fighting against gender equality education and legislation, sexual and reproductive rights, as well as the very use of the term ‘gender’ in policy documents and public discourse [29]. Although the relationship of the populist right with the Church was strong from the very beginning of the systemic transformation in the 1990s, the gaining of power in 2015 by the right-wing populist the Law and Justice party (PiS) allowed for an even deeper consolidation of the nationalist-clerical amalgam in the public sphere [30]. Under these conditions, in the official narrative, “gender” has become an element of the fight against “the West”, “EU political correctness”, and “liberal democracy” [31].

The concept of “ecology” has begun to serve a similar function, although in a less emotional form, under PiS rule. Like “gender”, in the narrative of the populist right, “ecology” has become a symbol of

a foreign culture and an attempt at external interference in Polish affairs. From the very beginning of its rule, the PiS government showed disdain for the principles of sustainable development by allowing trees to be felled in the Białowieża Primeval Forest. Guided by the interests of developers, it also changed the act and allowed trees to be cut in cities in 2017 [32]. A good illustration of the ideological foundation of this attitude was the statement by Witold Waszczykowski, a former minister of foreign affairs in the PiS government, who said in 2016, after the right-wing populists had won power in Poland:

The previous government carried out a leftist programme there (in the public media). It was as if the world was according to a Marxist model which has to automatically develop in one direction only—a new mixture of cultures and races, a world made up of cyclists and vegetarians who only use renewable energy and fight all forms of religion [33] (p. 155).

For this reason, looking at ecology and sustainable development from a gender perspective in Poland involves the analysis of a phenomenon that goes beyond the paradigm of populist power in two ways: Both gender and ecology are suspect phenomena in the eyes of right-wing populists. The relationship and interconnection of gender and ecology can only confirm their potential opposition to the order of the populist—nationalist power.

1.3. Coal, Climate Change, and Smog: The Environmental and Energy Context in Poland

Since communist times, a slogan about national wealth—coal was called ‘black gold’—has been in use in Poland [34]. At that time, the coal industry was the basis for the industrialisation and electrification of the country, as well as the development of chemical and metallurgical industries. The latter was also of military and political importance—Polish steel mills provided steel for the tanks of the Warsaw Pact troops [35]. The belief that coal plays a special role in the economy has survived the transformation period and is now held by right-wing populists. The PiS prime minister argued in 2016 that “there will be no strong Polish economy without a strong mining industry” [34]. After the PiS came to power in 2015, new ideological reasons for the defence of coal appeared. Namely, the populist PiS government and related media were reluctant to accept the demands for the decarbonisation of the economy, treating these as EU interference in national policy. The data for 2019 illustrate the scale of Polish energy dependence on coal: While hard coal-fired power plants and combined heat and power plants produced 46.5% of energy, brown coal-fired power plants produced 25.7% [36].

However, the ever deeper coal deposits in Poland mean its extraction is becoming increasingly expensive. This, in turn, means that domestic coal-fired power plants increasingly use imported coal—in 2018, imports increased to 20 million tonnes [37]. The outbreak of the pandemic and lower power consumption caused by lockdown also significantly worsened the economic condition of the mining industry [38]. Hence, the future of Polish coal mines is the subject of sharp political disputes in economic and environmental terms. The Upper Silesian Coal Basin (Górnośląskie Zagłębie Węglowe—GZW) is the main coal basin of Poland—in 2017, of the 21 mines in Poland, 17 were in Silesia [39]. Although the number of miners employed in the mining industry decreased sharply during the system transformation period (the number of miners fell from 388,000 in 1990 to 98,000 in 2015) [40], and 83,000 miners continue to work in this increasingly declining sector [41] (not counting the tens of thousands of employees of mining companies).

The functioning of the mining industry and the dependence of the energy sector on coal, in addition to economic costs, brings additional environmental and health costs, primarily it has a negative impact on the environment and human health. The operation of GZW affects the environment, as coal is burnt in Polish power plants and also contributes to global warming: GZW mines are a source of methane released into the atmosphere [42]. In Poland, air pollution from PM10 and PM2.5 dust and benzo(a)pyrene is a huge problem. In addition to industry, energy, and road transport, its main source is so-called low emissions, that is, flue gas from boilers and solid fuel stoves in households. Coal in Poland is not only the basis of the energy system, but it is still used for heating houses (particularly in the provinces) in the winter. With light winds and high pressures, low emissions are a source of smog, which is directly life-threatening [43].

How do women in Poland approach these climate, energy, and ecological challenges? Does the gender factor have any particular influence on the opinions expressed?

2. Research Methods

A survey was carried out in June 2020 using the computer-assisted telephone interviewing (CATI) method. It was a special period as the COVID-19 pandemic in Poland stopped coal mining for three weeks and the issue of decarbonisation became an element of public debate. The research sample was selected using the procedure of sampling without replacement. The sampling frame comprised of all mobile phone numbers used in Poland. This frame is a good approximation of the adult population of Poland, as over 90% of its representatives use mobile phones. The research sample included 1,001 adults, consisting of 478 men and 523 women. When using the simple sampling procedure, the maximum estimation error for a 1000-person sample is 3.1% (for the 50% fraction). This error was assumed to be acceptable for this survey. The sample was random—the telephone numbers used in the survey were randomly generated using prefixes (the first three or four digits of the number), which are in use in Poland according to information from the Office of Electronic Communications in Poland. The independent variables in this study were age, education, political sympathies, financial situation, and place of residence. In this article, however, we mainly focused on the gender differences that influenced respondents' responses.

Table 1 shows the distribution of the level of education, place of residence, financial situation, and political sympathies by gender of the respondents. Statistically significant differences between men and women are found in the level of education and political views: The surveyed women had better education than men, and the left-wing (Lewica—Left) and liberal (Koalicja Obywatelska—Civic Coalition) opposition had more supporters among women. The trend found in our research sample is similar to that observed in Polish society. These two variables (education and political sympathies) certainly have a large impact on the differences between men and women in their attitudes towards the environment in Poland. Other variables also reinforce this trend.

Table 1. Distribution of education, place of residence, financial situation, and political sympathies by gender (in percentage points).

Gender	Women	Men
Education		
Primary	15	19
Vocational	21	30
Secondary	36	33
Higher	28	18
Place of Residence		
Village	33	40
City of 19,000	14	14
City of 20,000–99,000	17	16
City of 100,000–499,000	19	16
City of over 500,000	16	14
Financial Situation		
Very good	4	4
Good	32	32
Mediocre	47	50
Modest	12	9
Very modest	3	2
Hard to say	2	3
Political Sympathies		
PiS (Law and Justice)	26	25
KO (Civic Coalition)	28	22
Konfederacja (Confederation)	4	13
PSL (Polish People's Party)	3	6
LEWICA (Left)	11	7
Other	3	3
I do not know	25	23

3. Results and Discussion

3.1. Energy Preferences of Society, Postulates to Abandon Coal, and the Politics of Power and Gender Differences

Generally, typical Polish society seems to prefer renewable energy sources (RES)—wind farms, photovoltaic farms, and hydro power plants were most often indicated. In this respect, there are no differences between men and women, but there are differences between social preferences and steps taken by the authorities. The right-wing populist government introduced unfavourable legal solutions in the context of wind energy development. Namely, it passed the Wind Farms Investment Act on 20 May 2016, which became effective in 16 July 2016. Its provisions made it difficult to build new wind farms (in practice, it means that a modern wind turbine has to be located at a distance of 1.5 km from housing, regardless of the opinion of local residents) [44] (p. 234). It also introduced unfavourable tax solutions for already existing wind installations. These legal changes stopped the development of onshore wind energy in Poland.

Photovoltaics (PV), on the other hand, remains the fastest growing RES sector in Poland. The total capacity of photovoltaic sources installed by the end of 2019 was almost 1.500 MW and in May 2020, it exceeded 1.950 MW [45]. Most of this is due to the citizens themselves and to grassroots social activity. Currently, the largest increase in new capacity is observed in the micro-installations segment, which means a high activity of individual and business prosumers.

However, the potential for the development of renewable energy is blocked by state policy. The aforementioned obstacles to the development of wind energy are part of the larger overall energy policy of the government, which does not want to give up coal (under the mantra of defending the Polish mining industry) and promotes the idea of building its own nuclear power plants.

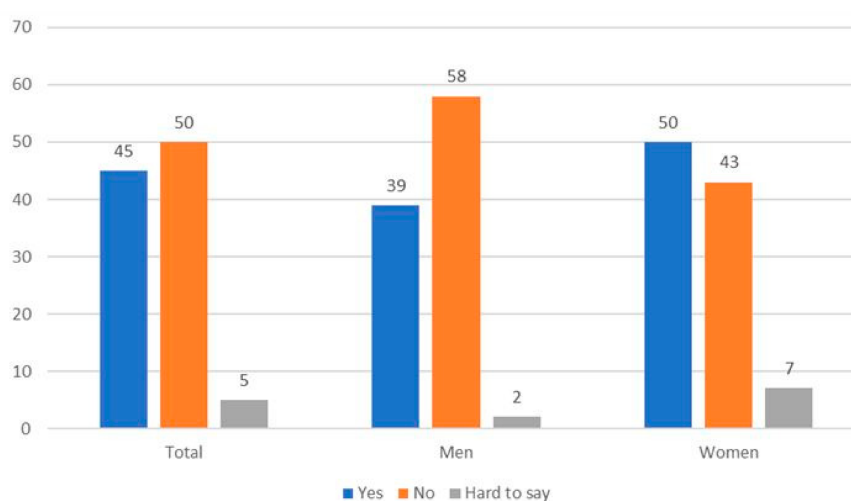
The aim of the Polish Nuclear Power Programme (PNPP) is to build an installed nuclear capacity of 6 to 9 GWe in Poland based on generation III and III and pressure water nuclear reactors. According to the PNPP, the first power plant will be ready in 2033 and the second one in 2038. The next reactors are to be put into operation every year or two. The schedule is organised up to 2043, when the third reactor in the second planned power plant should be commissioned [46]. The PNPP assumes not only nuclear energy, but also a centralised energy system model in opposition to energy transition based on distributed and decentralised energy sources. This means that the PNPP underestimates and ignores the potential of PV: The PNPP assumes that PV will reach only 3.1 MW in 2025 and will remain so until 2035 [46]. These assumptions are unrealistic and lower the potential of PV, which will exceed 2 MW by the end of 2020 in Poland [45]. In other words, according to PNPP forecasts, the development of nuclear energy will completely slow down the development of PV in Poland.

The government documents show the image of a centralised energy system, which wants to defend the coal industry lobby and also promote the rapid development of nuclear energy under the topic of climate protection. In this model, the distributed form of renewable energy is to be blocked. Although coal and nuclear power plants enjoy the least popular support, men and women differ the most in their assessment of these two energy sources. While 26% of the total population of Polish society support the construction of nuclear power plants, this percentage is 36% among men, and half of that among women at 18%. Similar differences are in the case of coal-fired power plants: 20% of men support coal and only 11% of women support coal (Table 2). In the context of the assumptions of government documents, it can be stated that women are not only more often opposed to nuclear and coal power plants, but they are more often opposed to the centralised energy models promoted by the authorities in Poland.

Table 2. Preferred energy sources in Poland by gender.

What Energy Sources, in Your Opinion, Should Form the Basis of Electricity Production in Poland?	Total	Gender	
		Men	Women
Total	1001	478	523
Wind farms	75%	74%	75%
Photovoltaic farms	65%	64%	66%
Hydropower plants	63%	65%	61%
Civic energy (private investments in photovoltaics, small wind turbines)	61%	65%	57%
Small local biogas plants	43%	45%	42%
Gas power plants	29%	31%	28%
Nuclear power plants	26%	36%	18%
Coal power plants	15%	20%	11%
Hard to say	1%	0%	2%

There are also significant gender differences in the acceptance of environmentalists' statements to close all coal mines by 2030. This date was postulated by the Climate Coalition [47] in the context of the general public debate on moving away from coal triggered during the 2019 elections to the European Parliament. At that time, the candidates of the left-liberal *Wiosna* [Spring] party indicated 2035 as the final date for the closure of all mines. In the case of the general population, this postulate has more opponents (50%) than supporters (40%) in Poland. In the case of men, these proportions are even more unfavourable for the expectations of environmentalists with 58% being against the quick closure of mines. The demands of the environmentalists would be possible to implement if the decision depended only on the votes of women with 50% of them supporting a quick abandonment of coal (Figure 1).

**Figure 1.** Do you support the postulate of closing all coal mines in Poland by 2030? (in percentage points).

How can these differences between men and women in attitudes towards coal in the energy sector be explained? The first association indicates divisions in political sympathies. In Poland, supporters of the populist right from the Law and Justice (PiS) party and the extreme-right Confederation party are in favour of maintaining traditional energy sources, while the transition to renewable energy sources is mainly supported by the voters of the left-wing and liberal opposition parties. In turn, the distribution of political sympathies is strongly dependent on gender divisions. According to research from November 2019, in the 18–35 age group, the extreme right-wing Confederation party (35%) enjoyed the greatest support among men, while the Left (Polish: Lewica) party was in first place among women of the same age (26%) [48]. Thus, opposition to coal-based energy among women goes hand in hand with political support for the Left party. Greater support for the left among women was

noted in developed countries as early as the 1990s. At that time, however, this trend did not exist in post-communist countries [49]. Now this political trend in Poland has been strongly strengthened under the conditions of right-wing authoritarianism after 2015. However, these differences between men and women in energy preferences seem to have not only political but also broader cultural determinants. Similar cultural and political trends were observed earlier in Western countries. In the late 1980s, surveys conducted in the United States and Canada showed that women were not only more concerned about the state of the environment and acid rain, but they “also expressed higher levels of perceived policy influence and political participation than men” [50]. These trends also appeared in Poland after more than 30 years.

3.2. Concern for the Environment and Gender-Related Political Priorities

The very feeling of environmental danger may cause greater concern for the condition of the environment. However, how can the differences in the views of men and women on this issue be explained? The deteriorating state of the environment is an important factor in reinforcing existing social inequalities, which is reflected in both power relations between social classes and between genders. With limited access to socially desirable conditions, such as health and the right to clean air and water, women become even more marginalised during an ecological crisis due to their worse position in the socio-economic structure [51]. This is perhaps one of the reasons they feel more concerned about the state of the environment. In all dimensions (Poland, the local community, and all over the world), women have shown to be more concerned about the state of the environment than men, with the biggest difference of 20% observed in the local community (Table 3).

Table 3. Assessment of threats to the state of the environment by gender.

Are You Concerned with ... ? (In Percentage Points)	Total	Gender	
		Men	Women
The state of the natural environment in Poland			
Hard to say	1	2	1
Yes	80	71	88
No	18	27	11
The state of the natural environment in the town you live in			
Hard to say	1	1	1
Yes	55	45	65
No	43	53	35
The state of the natural environment all over the world			
Hard to say	1	2	1
Yes	85	78	92
No	13	20	7

This greater concern for the environment also translates into the choice of other political priorities. In the case of women, environmental protection and counteracting climate change are the most frequently chosen (women make up 72%, which is 17% more than men). On the other hand, “national order and national security” and “new investments” were chosen less often by women than by men—for these two goals the difference was not as big as in the case of environmental protection (Table 4). Women’s choices were more oriented towards post-materialistic values (which promote interest in the environment, tolerance, and social trust) than towards traditional or materialistic values as understood by Inglehart [52]. Pre-materialist values (related to traditional religion and the patriarchal family model) and materialist values (emphasis on economic growth and maximisation of production and consumption) do not contribute to environmental protection and dominate under conditions of economic uncertainty. On the other hand, post-materialistic values are strongly related to interest in

environmental protection, primarily in developed countries [53]. At the same time, post-materialistic values go hand in hand with support for feminism and openness to the gender perspective [54].

Table 4. The government’s political priorities by gender.

Should the Government These Days Be Concerned Primarily with ... ?	Total	Gender	
		Men	Women
Total	1001	478	523
environmental protection and counteracting climate change	64%	55%	72%
new investments that will reduce unemployment	55%	57%	52%
order in the country and national security	30%	34%	26%
Hard to say	3%	2%	4%

The thesis about the simultaneous relationship of post-materialistic values with ecology and gender proved effective in the case of female city leaders: It influenced their greater interest in the effects of economic development and the impact of local politics on the quality of the environment [55]. To what extent is the relationship of post-materialistic values, gender, and ecology universal and how much does it depend on the local context? These issues are worth exploring in comparative research in the context of energy transition. However, today it is already possible to identify the relationship between gender and views on climate change.

3.3. Climate Challenges, Climate Scepticism, and Gender

The relationship between climate scepticism and right-wing populism is known [56–61]. Conspiracy theories, lack of trust in science, and dislike for the elite (not only political, but also cultural and scientific) support counter-scientific attitudes on climate change. Based on the analyses of scientific articles on climate change, it can be concluded that there is a clear consensus among scientists about the belief that human beings influence global warming [62]. From this perspective, the views of climate sceptics can be considered anti-scientific. In our research, these views are more often expressed by men than women. The statement that “climate change is primarily caused by natural processes” was not accepted by 55% of women but only 43% of men. On the other hand, the belief that “global warming is primarily a business and a tool to arouse fear” was accepted by 51% of men but only 36% of women (Table 5).

Table 5. Climatic scepticism by gender.

Do You Agree with the Opinion That ... ? (In Percentage Points)	Total	Gender	
		Men	Women
The so-called global warming is all about business: specific groups earn big money by making people afraid			
Hard to say	5	5	5
Yes	43	51	36
No	52	44	59
The natural processes that have always taken place on earth are primarily responsible for climate change			
Hard to say	4	5	2
Yes	47	52	42
No	49	43	55

The basic explanation for these differences under Polish conditions may be the correlation of opinions about climate change with the level of education. The analysis of the education structure by gender shows that women in Poland are a better educated group than men—in 2018, 32.6% of women had higher education compared to 21.9% of men [63]. Higher education is usually one of the means of emancipation from the rule of traditional stereotypes and values, and cultural traditionalism strongly

correlates with climate scepticism [64]. Additionally, there are the aforementioned political differences between the genders—the right-wing narrative preferred by males supports climate scepticism [65]. Just like in the United States, where support for Trump went hand in hand with climate scepticism [66], climate scepticism in Poland also involves repeating opinions spread by the right-wing media and right-wing government [3].

3.4. Ecology, Ecologists, Social Development, and Gender

A common belief in Poland in the circles of the populist right is that the demands of environmentalists and the ecological movement block the country's economic development. Michał Woś, the Minister of the Environment in the PiS government has repeatedly stated that “environmental organisations are used by lobbyist groups or commercial entities that want to use precise environmental protection law in order to block the possibility of investment” [67]. The right-wing media in Poland suggest that environmental activities may contribute not only to investment blockades, but also to an increase in unemployment. How do these stereotypes about environmentalists translate into public opinion? Although the majority of society rejects statements about ecologists, more women (72%) than men (67%) do not agree with the opinion that “ecology delays the economic development of the country”. It is similar in the case of combining the demands of environmentalists with the increase in unemployment: 61% of women (10% more than men) reject this view (Table 6).

Table 6. Ecology and economic development by gender.

Do you Agree with the Opinion That ... ? (in Percentage Points)	Total	Gender	
		Men	Women
Ecology delays the economic development of the country			
Hard to say	4	3	5
Yes	26	30	23
No	69	67	72
Meeting the demands of environmentalists would increase unemployment			
Hard to say	9	6	12
Yes	35	43	27
No	56	51	61

Even greater differences between men and women in Poland occurred in the assessment of ideological claims about environmental activities disseminated by pro-government right-wing media. According to right-wing journalists, the methods that environmentalists use in their actions allow them to be called ‘eco-terrorists’. The *Gazeta Polska* [Polish Newspaper], supporting the ruling PiS party, often contains similar opinions about environmentalists:

In their world, man is not an element of nature, but only a pest that sows destruction and whose activity must be limited at all costs. They defend their view everywhere and by any available means. They break the law more often and use violence [68].

Attempts to use nationalist prejudices by the right-wing media and suggestions that environmentalists in Poland are a tool to defend Russian and German interests are common [69].

While among men, 50% of the respondents were willing to accept penalties for the direct actions of environmentalists, as many as 62% of women were against it. It was similar in the case of nationalist slogans about “harming Polish interests” by ecologists—the vast majority of women (71%) did not agree with the views of right-wing newspapers on this issue (37% of men accepted these stereotypes and 60% rejected them) (Table 7).

Table 7. Attitude towards ecologists by gender.

Do you Agree with the Opinion That ... ? (In Percentage Points)	Total	Gender	
		Men	Women
Direct actions by environmentalists, such as blockades of offices and roads, are eco-terrorism that should be punished			
Hard to say	4	4	4
Yes	41	50	34
No	54	46	62
Environmentalists hurt Polish interests and harm the state's policy			
Hard to say	5	4	5
Yes	30	37	24
No	66	60	71

3.5. Climate Change and Personal Commitment

Women's opinions on environmentalists, climate change, and the abandonment of coal in the energy sector imply readiness to take specific actions. Namely, 70% of the surveyed women were determined to pay a voluntary and symbolic tax of PLN 100 (about EUR 25) for the fight against smog and global warming. Among men, this percentage was 55% (Figure 2). These data confirm previous analyses indicating that women can be agents of social change on national and local levels, a factor that strengthens civic activities and local democracy [70]. The history of social movements and the participation of women in the United States have shown how the issues of civil rights, social justice, and the rights of sexual minorities were fought with the active participation of women [71]. When it comes to fighting climate change, the potential of women is also still untapped.

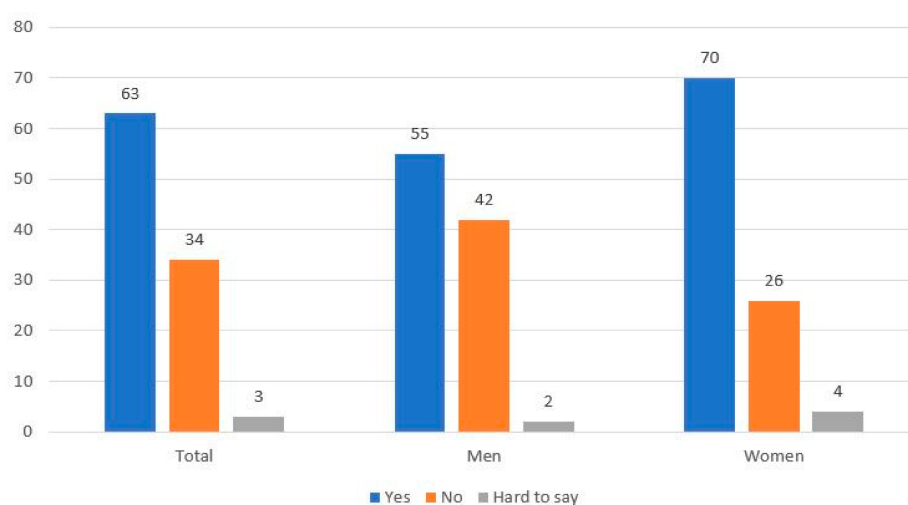


Figure 2. Would you agree to pay a tax of PLN 100 a year for the fight against smog and global warming? (in percentage points).

According to Joane Nagel,

When it comes to climate change, women do not equally generate greenhouse gas (GHG) emissions, nor are they equally represented in the negotiations to control them. But women are more than equal when it comes to bearing the negative effects of climate change. Gender is not the only basis for raising ethical and equity questions about climate change impacts and decisions, but it is an important one. [72] (p. 209)

4. Conclusions

Energy, Cultural, and Political Transition

If we agree that the main challenges of the modern world, such as climate change, resource depletion, environmental degradation, overpopulation, and rising social inequality are closely related and interact with each other thereby increasing the threats to humanity, the solution to these problems must take place simultaneously and holistically, not in a separate and partial way [73]. These interrelationships of social problems, class, and gender inequalities, are an unsustainable development and the need to change environmental policy have been fully revealed by the COVID-19 pandemic. The global course of the pandemic emphasised not only the global nature of the challenges faced by humanity, but also their multidimensionality: The endangered environment, unequal access to healthcare, the class nature of social threats, and the need to create supranational ecological solutions [74]. From this perspective, social inequalities including gender inequalities, are part of a larger set of problems to be solved, which also includes climate change and the need for a just energy transition. This requires not only a change of thinking, going beyond the prevailing paradigm of the present order and reaching for hints of social utopias [75], but also the reconstruction of existing social structures and model of politics. Otherwise, negative environmental changes will deepen social and gender inequalities and will lead to the unplanned development of the situation.

Namely, any form of change including climatic variability is likely to disparately impact the lives of women and men belonging to different wealth, age, and status groups, potentially enhancing, though in different ways, the risks and vulnerabilities they face. In the process, gender relations and the organisation of social reproduction are likely to change, though the direction of change is not necessarily predictable. In some instances, women's position and capacity to bargain may be strengthened, in others, already existing gender inequalities may become further intensified [76].

In Poland, energy transition, the effective counteraction of climate change, and ensuring greater gender equality require specific cultural and political changes. As long as Eastern Europe and Poland are overshadowed by right-wing populism, sustainable development will be impossible or very difficult [77]. On the other hand, the existing political tensions and gender inequalities will further politicise and exacerbate the issue of climate challenges. The results presented in this article clearly show that women in Poland constitute an important support for ecological activities and energy transition. The main reason for this is that women in Poland are better educated and have less conservative cultural and political attitudes compared to men. This may also be the case with the entire progressive vision of politics: Women have become its main driver and an opportunity for change.

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