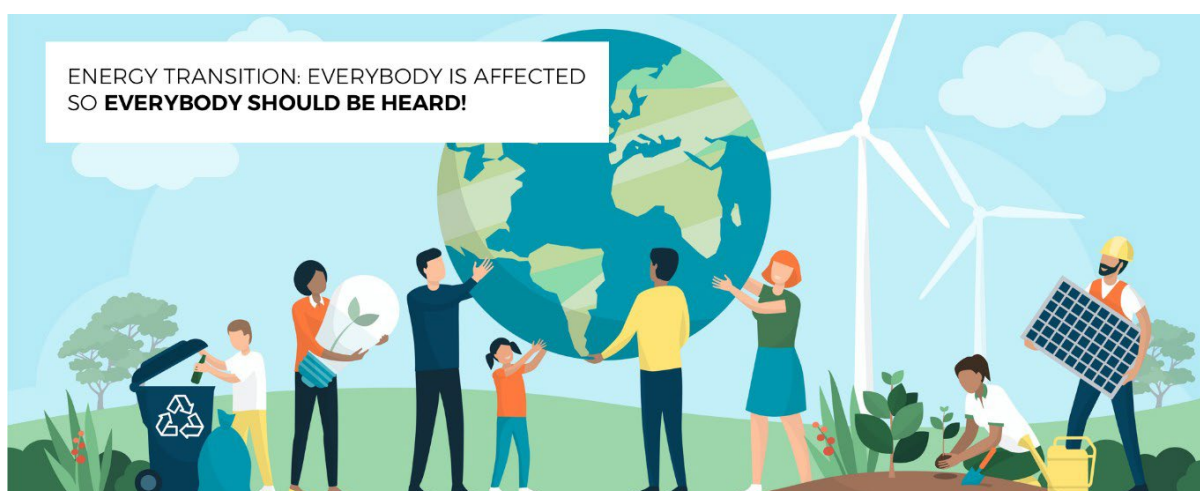


Fair Energy Transition for All

Final Recommendations



National Report of Poland

Results of dialogs about energy transition with vulnerable citizens and experts

September 2022

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Disclaimer

This national report is part of the project “Fair Energy Transition for All (FETA)”. FETA is based on focus group research conducted in nine countries in Europe - Belgium, Bulgaria, Denmark, Germany, Spain, France, Italy, the Netherlands, and Poland. FETA is supported by a consortium of Foundations composed of the Fondazione Cariplo, the Deutsche Bundesstiftung Umwelt, the IKEA Foundation, the King Baudouin Foundation, Stiftung Mercator, the Network of European Foundations and the Open Society Foundations. The project is spearheaded by the King Baudouin Foundation and operationalized by ifok, Climate Outreach, the European Policy Centre, and facilitators and policy experts in participating countries. National partners in FETA are Atanor and Levuur, ENEFFECT, Danish Board of Technology (DBT), Fondazione Giannino Bassetti, ifok, Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci, Berenschot and the University of Groningen, Missions Publiques, Polish Foundation for Energy Efficiency (FEWE), Instituto Sindical de Trabajo, Ambiente y Salud (ISTAS).

If you are interested in a synthesis publication of all countries and further information on the project and the methodology please check FETA’s website: <https://fair-energy-transition.eu/what-vulnerable-people-have-to-say/>.

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Polish Foundation for Energy Efficiency (FEWE): is a non-governmental organization, founded in 1990. FEWE's mission is to promote environmental protection and economic development by improving energy efficiency.

This is achieved by developing energy efficiency projects and programs with the participation of various stakeholders: government, regional and local authorities, financing institutions, business organizations, as well as housing management companies, housing communities and cooperatives, and households.

In its 30 years of activity, FEWE has carried out hundreds of energy efficiency works and projects in the public and private sectors, financed by its own funds or from national and international external sources, gaining extensive experience in the management, implementation and execution of energy efficiency and energy management projects and programs

In the FETA - Fair Energy Transition for All project, FEWE is a facilitation and policy partner in Poland.

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Executive Summary

This report presents the results of the *Fair Energy Transition for All* - FETA project as implemented in Poland in 2021 and 2022.

The objective of the project was the elaboration of recommendations intended both for decision-makers operating at national level and for European decision-makers to render energy transition policies fairer and more inclusive. The policy recommendations were drafted by selected groups of experts in the sector of energy poverty and energy transition, building on conversations with vulnerable groups of citizens and putting their voices at the center of the entire process. In each of the 9 European countries involved, the FETA project was designed in 3 phases (see below).

In Poland the project was implemented by Polish Foundation for Energy Efficiency (FEWE) as Facilitation Partner and as Policy Partner.

Phase 1: Citizen involvement activities through ten focus groups conducted on a national scale (summer 2021) – Citizens' engagement phase_1

11 focus groups were conducted by FEWE as Polish Facilitation partner within the FETA project.

The focus groups, which ranged from 6 to 15 people, were attended by a total of 107 people. Meetings were held across the country, in ten locations .

The cross-section of meeting venues aimed to best capture the specific characteristics of each region and the challenges faced by people from vulnerable groups, in order to get the broadest possible voice and picture of experiences among these groups in Poland.

Phase 2: Involvement of experts in multi-stakeholder workshops for the elaboration of suggestions for policy makers towards the just transition based on the outputs emerging from the discussion with citizens (March 2022)

Ten experts, associated with NGOs, academia, business, as well as local government, with professional experience in energy, social and mobility policies , participated in the meetings. The experts prepared 11 recommendations during the two meetings which covered two areas: housing (6 recommendations), transport (5 recommendations):

- **Housing**

1. Government support for the development and use of virtual prosumers and collective prosumers.
2. Information campaign among housing association managers to encourage investment in the installation of photovoltaic panels in a hybrid system combined with heat pumps for DHW.
3. Building support programmes for vulnerable groups by the government in consultation with local governments and final beneficiaries taking into

account the specificities of each.

4. Establish support mechanisms to promote comprehensive thermo-modernisation.
5. Investment in high energy standard social housing - extending the formula of Social Housing Associations.
6. Development of a network of local energy spokespersons together with the creation of regional knowledge-sharing platforms for citizens.

- **Transport:**

1. Development of inter-municipal transport agreements among local authorities building one common transport network for the area.
2. Further development of e-offices including information and promotion campaign in poorly connected areas.
3. Creation of standards for the design and implementation of investments focusing on the elimination of barriers in public spaces.
4. Introduce tariffs on fuel from Russia, and use the proceeds to support energy-poor groups.
5. Development of cycling and pedestrian infrastructure with simultaneous creation of bicycle and pedestrian advocates in municipalities to express the needs of inhabitants.

Phase 3: The FETA Fair Energy Forum in in Poland (09 and 18 July 2022, Crocow) - Citizens' engagement phase II

The Fair Energy Forum (FEF) was organised into two meetings which, due to their good location in terms of transport, took place in the centre of Krakow.

The FEF involved a group of 32 citizens who participated in the eleven focus groups (held in summer 2021) to discuss the recommendations elaborated by experts and prioritize them. The opinions of forum participants on the question of identifying priority recommendations were very divided. In the end, based on the participants' individual assessments of the priorities, they selected the ones they thought were most needed.

Recommendations related to housing were definitely considered more urgent. Of the top 5 recommendations, only one is related to transportation.

Participants were very unanimous in identifying the recommendations they felt were not needed or would be ineffective especially on the recommendation: "Introduce tariffs on fuel from Russia, and use the proceeds to support energy-poor groups."

Overview

The Fair Energy Transition for all (FETA) project gives a voice to citizens from so-called vulnerable groups for whom energy transition processes may present challenges and difficulties that are felt more than for the rest of the population. The project gives them the opportunity to share their views on the issue and express their needs related to the energy transition.

The realisation of the project is taking place in two tracks: at national level in 9 European countries (Belgium, Bulgaria, Denmark, France, Germany, Italy, Spain, Poland and Portugal) and at European-wide level involving 900 citizens through 90 focus groups and 150 experts at national and European level.

The goal is to support the design of national and European policies that guarantee a fair, equitable and inclusive energy transition.

1) Citizen involvement activities through ten focus groups conducted on a national scale (summer 2021) - Citizen Involvement Phase¹

11 focus groups were conducted by FEWE as Polish Facilitation partner within the FETA project.

The focus groups, which ranged from 6 to 15 people, were attended by a total of 107 people. Meetings were held across the country, in locations:

- Oświęcim
- Bębło
- Kraków
- Myślenice
- Puławy
- Lublin
- Łódź
- Warsaw
- Olsztyn
- Katowice

The cross-section of meeting venues aimed to best capture the specific characteristics of each region and the challenges faced by people from vulnerable groups, in order to get the broadest possible voice and picture of experiences among these groups in Poland.

Recruitment for the focus groups was done in cooperation with local associations and action groups in order to gather as diverse a group as possible in terms of demographic and social characteristics.

The meetings were attended by people representing the following groups:

- Persons with low income;
- People living in the city;
- People from rural areas;
- Seniors;
- Single mothers;
- Disabled persons;
- Retirees;
- Young people up to 25 years old.

In general, the participants approached the discussed topics related to energy use with great commitment.

The group discussions carried out were characterised by considerable homogeneity of opinion on the issues analysed, regardless of the age, gender or living situation of the respondents. Few areas of conflict or issues provoking contradictory reactions were observed. Despite the diversity of the criteria for selecting group participants, they all share a common difficult experience of living in a state which, in their opinion, does not sufficiently support people in difficult life situations.

A large majority of survey participants see climate change as one of the key challenges facing the world today. This is the only problem spontaneously indicated in the context of global threats in each groups. This is related to recently observed extreme weather phenomena in Poland and Europe, such as heavy rainfall, tornadoes, windstorms, hailstorms and high temperatures. However, it is debatable how much influence human activity has on the changes taking place. Some of the respondents believe that this impact is indisputable and results from economy leading to the devastation of the natural environment. At the same time, these respondents differ in their perception of the harmfulness of activities related to particular areas of everyday life and the global economy.

Participants recognised the need for an energy transition - commonly understood as the need to change the structure of energy generation sources - on a global scale. However, some of those surveyed believed that this need is based not so much on the need to limit climate change as on the fact of depleting energy resources.

A large majority of the respondents are aware that the production of energy and heat in Poland is based on solid fuels, in particular coal, whose resources will be depleted in the near future or, due to the growing costs of fields exploitation, its further mining will lose its economic sense. It is emphasised that the domestic power industry is already importing cheaper coal from neighbouring countries and even from such exotic destinations as New Zealand, so the future of further coal mining in Poland looks pessimistic unless reforms are implemented in this area.

2) Involvement of experts in multi-stakeholder workshops for the elaboration of suggestions for policy makers towards the just transition based on the outputs emerging from the discussion with citizens (March 2022)

The FETA National Expert Meetings in Poland were organised on 9th March and 23rd March 2022 in an online format.

Ten experts, associated with NGOs, academia, business, as well as local government, with professional experience in energy, social and mobility policies, participated in the meetings. The experts prepared 11 recommendations during the two meetings which covered two areas: housing (6 recommendations), transport (5 recommendations):

- **Housing**

1. Government support for the development and use of virtual prosumers and collective prosumers.
2. Information campaign among housing association managers to encourage investment in the installation of photovoltaic panels in a hybrid system combined with heat pumps for DHW.
3. Building support programmes for vulnerable groups by the government in consultation with local governments and final beneficiaries taking into account the specificities of each.
4. Establish support mechanisms to promote comprehensive thermo-modernisation.
5. Investment in high energy standard social housing - extending the formula of Social Housing Associations.
6. Development of a network of local energy spokespersons together with the creation of regional knowledge-sharing platforms for citizens.

- **Transport:**

1. Development of inter-municipal transport agreements among local authorities building one common transport network for the area.
2. Further development of e-offices including information and promotion campaign in poorly connected areas.
3. Creation of standards for the design and implementation of investments focusing on the elimination of barriers in public spaces.
4. Introduce tariffs on fuel from Russia, and use the proceeds to support energy-poor groups.
5. Development of cycling and pedestrian infrastructure with simultaneous creation of bicycle and pedestrian advocates in municipalities to express the needs of inhabitants.

The discussion format for the two meetings was adapted from the original scenario provided by the FETA partners.

The starting point of the first meeting was the experts' discussion on the results of the focus groups, where they could share their first impressions and concerns. Then, in order to deepen the experts' understanding of the attitudes, challenges and opinions expressed by those participating in the focus groups, they were introduced to the 5 personas.

The personae were intended to make the experts closer to the people taking part in the focus groups and the motivations for their actions and opinions easier to understand. The experts were able to find out not only who he/she is but also how he/she responds to questions about: what do you think about energy transformation? What are your pain

points, concerns and challenges? What is just transition for you?

The experts sought to answer the questions:

- What support/assistance and from whom can the selected persona benefit today?
- What support/assistance might he/she still need?
- Which issues are key to improving the situation of persons?

The second meeting started with an analysis of the current policy framework in Poland on policies related to the energy transition and an answer to the question: How do we deal with the problems of vulnerable people in the context of the energy transition for today? They then recalled the results of the work during the first meeting and proceeded to identify and prioritise possible policy measures that could be introduced/improved, which could respond to citizens' views, needs and ideas. In the final part of the meeting, the experts developed policy recommendations, also identifying the audience for the experts' proposals and discussing potential blind spots and trade-offs.

3) A Fair Energy Forum (09 and 18 July 2022, Crocow) - Citizen Involvement Phase II

The Fair Energy Forum (FEF) was organised into two meetings which, due to their good location in terms of transport, took place in the centre of Krakow. Each of the meetings lasted 3 hours

The FEF involved a group of 32 citizens (11 people at the first meeting, 21 people at the second meeting) who participated in the eleven focus groups (held in summer 2021) to discuss the recommendations elaborated by experts and prioritize them. The opinions of forum participants on the question of identifying priority recommendations were very divided. In the end, based on the participants' individual assessments of the priorities, they selected the ones they thought were most needed.

Recommendations related to housing were definitely considered more urgent. Of the top 5 recommendations, only one is related to transportation.

Participants were very unanimous in identifying the recommendations they felt were not needed or would be ineffective especially on the recommendation: "Introduce tariffs on fuel from Russia, and use the proceeds to support energy-poor groups."

Both meetings began with an introductory session. Participants were presented with the results of the experts' work, along with a discussion of the recommendations. The processes and methods adopted to engage the experts were also discussed, as well as the fairness (or unfairness) of existing policies (in both energy transition and energy poverty). Participants had the opportunity to inquire or clarify issues that were not understandable to them so that the entire group used language that was understandable to each other.

The groups then began discussions on each of the recommendations prepared by the experts. The goal was to enrich them with useful elements to be taken into account when developing policies toward a just transition.

Citizens were then asked to rank the recommendations in order of importance, where 1 meant the most important recommendation and 11 meant the least important. A final round of comments was then conducted to gather further suggestions and input to contribute to the design of equitable transition policies for all.

Results and Context

Recommendations

The 11 recommendations for policymakers were prepared by experts at two meetings in spring 2022, based on the collected opinions, experiences, concerns and hopes of focus group participants on the topic of a fair energy transition for all. They were then reviewed and refined by citizens involved in the Fair Energy Forum.

Taking into account each FEF participant's evaluation of the recommendations in terms of their importance, relevance and effectiveness, they were ranked from those considered most important to those least important or rejected.

Participants manifested a sense of the high importance of the topic of energy transition - some of them declared an increased interest in the development directions of the country's energy policy and in topics related to energy transition. At the same time, participants stressed that the meeting had an educational value for them, providing a valuable source of information.

During the meetings, the prevailing belief was that investments in energy-efficient solutions are very expensive and exceed the financial capabilities of the average citizen.

They pointed out that energy-efficient solutions are available primarily to groups that are better off and more easily able to navigate modern market realities, while vulnerable groups are deprived of real support.

At the same time, as during the focus groups, low or even no confidence in the state as an institution setting the long-term strategy for the energy transition was emphasized (lack of a sense of stability due to constantly changing targets and legislation).

There was an emphasis on regionality - the inclusion of local government institutions at the lowest levels and local activists/representatives of various vulnerable groups that may be particularly affected by the energy transition process.

The discussion also touched on the war in Ukraine in the context of the challenges facing the energy system in Poland.

The war made the participants aware of the need for change and the search for alternative energy sources to fossil fuels, and on the other hand increased the conviction of the need to ensure energy independence both individually and nationwide.

1. Development of a network of local energy spokespersons together with the creation of regional knowledge-sharing platforms for citizens (Housing)

The state should create a structure and standards for action and support the

process by subsidising local governments to build up a cadre of energy advisors who will be responsible for advising and educating on the energy transformation in municipalities.

Conditions for success:

- The energy advisor is knowledgeable about the technical issues of buildings, as well as issues of investment financing and obtaining subsidies;
- The advisor is close to the people - supporting and advising by visiting beneficiaries in their homes and directly supervising the investment with the beneficiary's welfare in mind at all times.
- Equal accessibility for energy advisors for all - this involves the establishment of at least one such post in each municipality.
- Supplement the function of the energy advisor with the creation of a knowledge platform on energy efficiency, which would instruct in an easy and accessible way about possible subsidies and steps in improving energy efficiency in the home or apartment.
- Diversify channels for reaching residents - information should be distributed both digitally and through traditional forms such as flyers, guides or information in the local press

„At the moment there is a terrible mish-mash [of information], people are bombarded with information from all sides, they are losing confidence in this information. We're being showered with heaps of information of little value. So it would be useful to have a specific person [in the municipality] who I know will give me reliable and clear information."

- Older person, low income, with poor digital skills

2. Information campaign among housing association managers to encourage investment in the installation of photovoltaic panels in a hybrid system combined with heat pumps for DHW. (Housing)

The introduction of the concept of the collective prosumer to the Polish law allows for the use of energy generated by all residents of a housing community or cooperative. Thus, an information campaign should be conducted to encourage managers to plan and implement this type of investment, especially in places where it is only possible to use heat sources using electricity.

FEF participants considered important the need to increase the involvement of community and cooperative managers in investments related to improving the energy efficiency of the housing stock and introducing new solutions that, over time, will lead to a reduction in the cost of energy purchases.

However, doubts have been raised about the technical feasibility of such an investment, the fairness of accounting for costs and profits, and doubts are being raised about the long-term viability of such a solution. It was emphasized that the boards of directors, in particular, of housing cooperatives, are ossified

creations, approaching all technological innovations with detachment.

Conditions for success:

- The campaign preceded by the creation of a grant program that will be available to all communities, and the funds allocated for its implementation will meet the needs of all applicants.
- A campaign aimed simultaneously at managers and residents who could influence managers
- A campaign focused on presenting the benefits of the changes and including information on the mechanisms for financing them.
- Investment implementation plan preceded by direct meetings with residents with the participation of specialists (opportunity for discussion and ongoing response to questions and concerns)

"There are housing associations that rely on what they have. The ability of cooperative managers to change habits is often very limited. [For cooperative managers]As it is, it is fine, and any investment presents potential problems and risks. I consider investments in photovoltaics and heat pumps in multi-family buildings to be a very good idea, but it is important to remember how ossified these cooperatives are, how unwilling they are until they see some self-interest in an investment. They don't even want to know that something like this can be done."

- Big city resident, poorly educated, long-term unemployed

3. Building support programmes for vulnerable groups by the government in consultation with local governments and final beneficiaries taking into account the specificities of each. (Housing)

Currently in Poland most of the support and incentive programmes are built on a national level without taking into account the needs and specificity of regions. It would be necessary to create support mechanisms dedicated to particular regions, taking into account the voice of the final beneficiaries and self-governments. In addition, it should be noted that municipalities often do not use the currently available mechanisms due to barriers related to the need to have own contribution when using the programmes and fear of high operating costs.

The regions in Poland are very different in terms of infrastructural development and the abundance of different types of fuels for heating buildings, as well as in terms of wealth. These differences exist not only regionally but also between urban and rural areas.

Therefore, decentralization is necessary to see the specific needs of local communities.

Conditions for success:

- Energy transition support programs should be developed and implemented with

the participation of local government representatives.

- The voice of people from vulnerable groups should be included in the process. The peculiarities and potential of each region should be taken into account when creating regional programs (e.g., promote with appropriate subsidy mechanisms green wood gasification boilers in regions with high biomass availability).
- National and regional programs should complement each other.

4. Establish support mechanisms to promote comprehensive thermo-modernisation. (Housing)

A system of support for comprehensive thermomodernisation financed by the State should be created, as it brings the best results in the long term. At the same time, the created system should take into account the possibility of dividing the actions into years, so that vulnerable groups have the possibility to carry out investments in stages, dividing them into smaller ones, gradually improving thermal comfort and reducing energy consumption.

It should be remembered that Polish society is characterized by low trust in state institutions and a belief in the unstable nature of the rules introduced by the state, which translates into an unwillingness to participate even in subsidy programs. Recent events related to the increase in energy prices and the selective, extremely unfair, offer of support for users of selected fuels have further strengthened this trend.

Conditions for success:

- The program must provide potential beneficiaries with a guarantee of security. The state should guarantee transparent and possibly unchangeable conditions for participation in the program over a multi-year period regardless of the changing economic and political environment and regulations.
- The program should be characterized by flexibility in selecting the scope and level of support depending on the needs of the beneficiaries.
- Energy advisors should be included in the program as support in the investment implementation process.

5. Development of inter-municipal transport agreements among local authorities building one common transport network for the area. (Transport)

Entering into agreements will allow municipalities to build better quality transport for their residents. The system is then more integrated and tailored to passengers' needs. Integration also makes it easier to plan the further development of the transport network.

A large part of the population of small towns and villages does not have access to public transportation in Poland, which significantly limits their mobility, affecting their ability to change jobs, choose a school or receive medical services outside their place of residence. Communication exclusion primarily affects the elderly,

young people and people with disabilities.

Conditions for success:

- Creating new transportation solutions should be done in consultation with local citizens, taking into account their needs and lifestyle (hours of commuting and returning to work or school)
- Public transportation should take into account the needs of vulnerable groups i.e. adjustments for people with disabilities or the elderly or parents with young children
- Introduce a single-ticket system where possible, allowing travel on buses, trains, streetcars, etc.

"The development of public transport would allow people from my village to get to the agglomeration more efficiently, which would level the playing field [with city dwellers], increase their opportunities for development. Because they wouldn't have to buy a car."

- Large family living in a rural area with no access to public transport

6. Further development of e-offices including information and promotion campaign in poorly connected areas. (Transport)

For several years, an electronic platform has been developed in Poland, the e-office, thanks to which it is possible to handle matters in the office, via the Internet without the need for physical contact with the office. It is recommended that the platform be further developed so that all matters connected to the municipal level can be handled via the electronic path. At the same time, an information campaign should be implemented in municipalities to encourage residents to use the electronic form for handling official matters.

The recommendation is particularly important from the perspective of a part of the population, especially people from poorly connected areas and those with disabilities, but it is important to remember when implementing the recommendation about older people who, do not have digital competence or access to infrastructure that allows them to remotely handle official matters.

Conditions for success:

- Integration of a number of existing systems for accessing public services of different institutions into one universal system
- The system should be built on the basis of user-friendly solutions with lower digital competence.
- At the same time, efforts should be made to popularize Internet access in Poland, especially in rural areas
- Simultaneous educational activities to increase digital competence of citizens, especially seniors.
- Leaving traditional channels for using the services of public institutions, bearing in

mind that access to digital infrastructure should not exclude some regions of the country or social groups

7. Creation of standards for the design and implementation of investments focusing on the elimination of barriers in public spaces. (Transport)

Poland is one of the few European Union countries that has not developed, in a comprehensive manner, a range of solutions to accommodate the needs of people with various types of disabilities. Some local authorities try to act independently in this area, issuing appropriate regulations or standards. These actions do not favour unification of standards of support offered to persons with disabilities and are characterized by a significant degree of decentralization.

Currently people with disabilities in Poland have very limited access to many public buildings, including schools and offices, which results in dependence on third parties. This particularly strongly affects young people with disabilities, who feel strongly discriminated against among their peer group.

Conditions for success:

- Representatives of people with disabilities should be included in the process of designing buildings and transportation routes. This would guarantee the adoption of more efficient and disability-friendly solutions for moving around in public space.
- It is necessary to create all-universal and applicable standards for the design of buildings that are friendly to people with different types of disabilities.

8. Government support for the development and use of virtual prosumers and collective prosumers.. (Housing)

The recommendation among the participants of the forum was met with curiosity but also reserve which was associated with the low level of knowledge declared by the participants.

As a first step towards the full implementation of the recommendation, it is recommended to disseminate knowledge about changes in the law and possible related investments supported by simple examples.

The idea of a virtual prosumer sounds intriguing, while in Polish conditions it raises many concerns

related to the lack of direct supervision of the infrastructure, which can result in devastation or theft.

In addition, the development of subsidy programs in this area should take into account the unequal possibilities of participation in the investment costs of individual households. People with low incomes or from vulnerable groups should be covered by additional shielding programs that ensure their participation in the

investment without incurring excessive costs.

" It would have to start with any support from the government in acting [on the energy transition]. We consumers are a bit helpless in all of this, we don't have that support, and I know we should be moving in that direction. Active state support would certainly be a big incentive to act. Financial support, but also substantive support, structured in such a way that any average Blacksmith could benefit from it. Because at the moment only those who have the money to do so benefit from subsidies. On top of that, there is a lot of bureaucracy - people who are less knowledgeable, less resourceful are at the moment completely excluded from the process."

- Low-income family, from a rural area, with a disabled child

9. Investment in high energy standard social housing - extending the formula of Social Housing Associations (Housing)

Social housing associations are public or private non-profit companies or cooperatives, which obtain funds for housing investments from the National Housing Fund. Their main task is to build affordable housing with moderate rents, modernise their stock and administer their buildings

The current TBS formula is not currently seen as an attractive alternative to property ownership. In Poland, the vast majority of people live in their own properties and it is natural to want to own property outright. Renting is seen as a transitional stage on the way to full ownership. Hence, the idea of TBS did not arouse enthusiasm among respondents, although the idea of designing buildings with high energy standards was evaluated very positively.

Instead of focusing solely on the idea of energy-efficient buildings in the TBS formula, it is recommended to develop rigorous standards that should apply to the entire construction industry.

10. Development of cycling and pedestrian infrastructure with simultaneous creation of bicycle and pedestrian advocates in municipalities to express the needs of inhabitants (Transport)

Elements of infrastructure such as bicycle lanes, contraflow lanes or speed restricted zones are becoming more and more common in Poland, but still the awareness of the existence of methods for organisation of cycling and car traffic is insufficient.

Despite this, the recommendation was not considered a priority by those who took part in the survey. However, participants recognize the usefulness of the recommendation while pointing out several important elements in trying to implement it:

- The person occupying the ombudsman position was an active cyclist, pedestrian as well as driver, so as to be able to take into account the perspective of all groups
- regulatory changes are required, the implementation of which should involve the

various communities that use the transportation space.

- At the same time, implement educational activities among pedestrians, cyclists and scooter users on the principles of safety of movement on roads and traffic routes.
- Strive to separate the traffic of different types of users of traffic routes.

11. Introduce tariffs on fuel from Russia, and use the proceeds to support energy-poor groups. (Transport)

If it were to be a fund to support vulnerable groups, it cannot at the same time increase the burden on these groups, which is what will de facto happen if the additional tax is hidden in the price of fuel. Such mechanisms should be tied directly to revenues.

Acknowledgements

We would like to thank all the people who participated in the creation of this report. In particular, we would like to thank all the participants in the focus groups, expert meetings and Fair Energy Forums for their engaged participation and discussion.

Annex 1 Groups Synthesis Report - POLAND

Focus group workshops. Synthesis Note. Poland

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Fundacja na Rzecz Efektywnego Wykorzystania Energii
Polish Foundation for Energy Efficiency
Rymera 3/4
40-048 Katowice, Poland

July-August 2021

In Poland, 11 focus groups were conducted with 107 participants.



11
focus groups



107
people

Men
39%



Women
61%

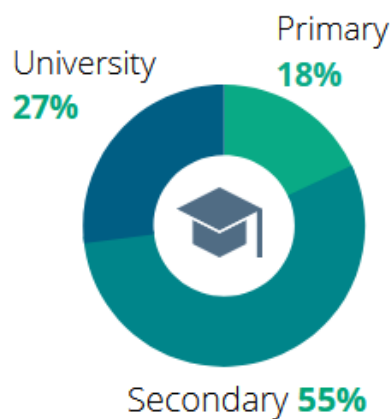


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18



73

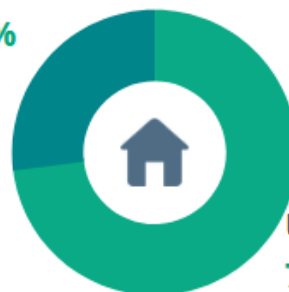


University
27%

Primary
18%

Secondary **55%**

Rural area
27%



Urban area
73%

Groups attending the meetings:

- Persons with low income
- People living in the city
- People from rural areas
- Seniors
- Single mothers
- Disabled persons
- Retirees
- Young people up to 25 years old

Summary

The group discussions carried out were characterised by considerable homogeneity of opinion on the issues analysed, regardless of the age, gender or living situation of the respondents. Few areas of conflict or issues provoking contradictory reactions were observed. **Despite the diversity of the criteria for selecting group participants, they all share a common difficult experience of living in a state which, in their opinion, does not sufficiently support people in difficult life situations.** There was a general mistrust about state institutions (especially those responsible for helping people at risk of exclusion), and a lack of trust in the effectiveness of their activities. These objections also apply to energy issues, both national and individual.

In general, **the participants approached the discussed topics related to energy use with great commitment.** This may be related to the fact that the problem of air pollution has been the subject of intense public debate in recent years, and many of the participants are currently facing the necessity of replacing individual heating sources due to tightening legal regulations. Young people at risk of exclusion (poorly educated, low income) were an exception to the general participants. Their level of involvement in the discussion was low, which was a result of limited knowledge in the areas discussed and generally a noticeable lack of interest in the discussed topics.

A large majority of survey participants see climate change as one of the key challenges facing the world today. This is the only problem spontaneously indicated in the context of global threats in each groups. This is related to recently observed extreme weather phenomena in Poland and Europe, such as heavy rainfall, tornadoes, windstorms, hailstorms and high temperatures. According to the respondents these phenomena did not occur in the past with such intensity and frequency as they do nowadays. Moreover, the breakdown into four seasons characteristic of our geographical area is gradually disappearing. However, it is debatable how much influence human activity has on the changes taking place. Some of the respondents believe that this impact is indisputable and results from economy leading to the devastation of the natural environment. At the same time, these respondents differ in their perception of the harmfulness of activities related to particular areas of everyday life and the global economy. **The causes of climate change include over-industrialisation, consumerism in modern societies and the resulting overproduction of waste, transport pollution and energy production based on fossil fuels.** However, there is an important group of researchers who oppose this narrative, describing weather changes as part of nature's natural cycle, which can only be minimally affected by human activity.

Participants recognised the need for **an energy transition - commonly understood as the need to change the structure of energy generation sources - on a global scale.** However, some of those surveyed believed that this need is based not so much on the need to limit climate change as on the fact of depleting energy resources. This problem is particularly visible in Poland. Representatives of the surveyed social groups have no doubts that the national energy system requires thorough reconstruction. **This need concerns both the necessity to modernise the transmission infrastructure and to modernise the sources of energy generation and, consequently, it requires a transformation of the fuel structure on which the Polish energy sector is currently based.** A large majority of the respondents are aware that the production of energy and heat in Poland is based on solid fuels, in particular coal, whose resources will be depleted in the near future or, due to the growing costs of fields exploitation, its further mining will lose its economic sense. It is emphasised that **the domestic power industry is already importing cheaper coal from neighbouring countries** and even from such exotic destinations as New Zealand, so the future of further coal mining in Poland looks pessimistic unless reforms are implemented in this area.

Attitudes to fairness

The concept of fairness is perceived in a very similar way in all groups surveyed, and participants had no problem expressing themselves on this topic. **Justice is generally understood as ensuring equal opportunities for participants in diverse social groups.** Its essence is an individualised approach that takes into account the specific needs of individuals and collectives.

In the area of energy transformation in the individual context, this means guaranteeing equal access to modern energy technologies to all citizens and adjusting the pace of the change process to their possibilities. Meanwhile, **in the opinion of the respondents, changes in the structure of individual heating sources are being forced through in Poland without ensuring that all interested parties have access to professional advice.** The state institutions do not care that the citizens understand and accept the necessity of implementing the changes, and by acting prescriptively, they do not treat them as partners. Such an approach particularly affects groups at risk of exclusion, deprived of tools and competences to seek information on their own. **The state lacks long-term planning which would guarantee the unchangeability of the rules established at the beginning, according to which the transformation should take place, regardless of the current political or economic situation.** According to the participants, **a just transformation should include the creation of instruments of support (both substantive and financial) for people living in difficult conditions. Energy transformation - according to the respondents - should be the responsibility of the state. It is unfair to require from the citizens to change their behaviour first** (e.g. resignation combustion cars or heating buildings with coal). The example should come from the top. This is illustrated by the opinion that before the need for changes affects individual energy users, the state should modernise the energy system (e.g. invest in nuclear energy) so as to reduce coal burning in power plants.

From a global perspective, **the energy transition must respect local economic and geopolitical conditions.** In the opinion of the respondents, **the activities of the European Union lack flexibility and individuality of approach.** When developing a European strategy for energy transformation, one should take into account Poland's current resources, the condition of the energy production system and the need to ensure national energy security. **The creation of homogenous solutions for countries with radically different capabilities and needs has been criticised.** The imposition by the European Union of a one vision for energy development and the same speed of implementation of changes in all countries is perceived unequivocally negatively. **In the case of Poland, energy transformation should involve a gradual move away from coal.** However, the changes must be introduced in an evolutionary rather than revolutionary way and be planned not in a perspective of years, but of decades. According to participants, this is the only way to protect the interests of the country and the most threatened social groups. On the other hand, respondents agree that there is a general lack of objective knowledge and information on which energy solutions are the most beneficial for Poland. It is commonly indicated that currently the issue of perceiving the right direction of the energy transformation is conditioned by political views, there is a lack of objective authorities who can be trusted in this matter.

They also point out that there is a disproportionate level of involvement of different regions of the world in efforts to reduce climate change in relation to their actual responsibility for generating pollution. It is not fair that Europeans have to bear the high social and economic costs of changes in energy use, while large economies such as China and the US do not impose such severe restrictions on their citizens.

Energy use

Energy consumption is perceived by respondents mainly in the context of heat consumption for heating and domestic water preparation and electricity use. In the awareness of the participants, issues such as transport or food production are not obviously related to the area of energy use and saving.

It was pointed out that **a common problem in Poland is the poor condition of housing resources and technical infrastructure.** A significant part of residential buildings is not insulated and requires renovations including the building envelopes, woodwork and internal installations. Many regions of the country have no access to sewage system or gas network. This feature has a significant impact on lowering the living comfort of the already poor Polish society, it also shapes the needs and possibilities of households to use energy. As the costs of heat and electricity have a significant share in the general living costs of the survey participants, the subject of energy sources and ways to save them arouses considerable emotions among them.

The great majority of respondents, with the exception of younger participants, declare to have energy saving habits. The more difficult the economic situation of a household is, the more radical the ways of energy saving are. The approach to heat saving is also conditioned by the type of heating used. **Respondents using the district heating system highlight that the consumption billing system does not motivate them to reduce heat consumption (no possibility to control actual consumption).** In contrast, participants using individual heat sources are strongly motivated to save. It should be emphasized that the basic motivation for saving is purely economic - ecological values do not play an important role in this case. Their importance is only revealed in the case of waste segregation, commonly indicated as one of the key activities for environmental protection.

Some of the participants who use solid fuels for heating come from areas covered by air protection regulations. For this group of respondents, **the problem of replacing their current boilers with legally permitted sources is one of the key challenges.** Most people in this situation perceive these regulations as too strict. They indicate that the use of appropriate combustion techniques and the use of locally available fuels (e.g. biomass) in the final balance it's little threat to the environment. What they do see as **really damaging to the climate is the uncontrolled increase in the number of cars due to weak public transport,** the development of green spaces (both in towns and in the countryside), and the lack of an effective waste management system.

The respondents believe that a fair energy transition should ensure that energy consumers can maintain their lifestyles as much as possible and that each consumer has individual freedom of choice. In the understanding of the survey participants, this means that solutions that would force significant restrictions on energy use should be avoided. Such solutions are likely to arouse strong social resistance as they contradict the inherent freedom-loving nature of the Polish population and are associated with the command economy of the real socialist era. The activities of the state should focus on encouraging the society to the desired behaviours (e.g. by emphasising the resulting individual benefits). All changes in energy use patterns should be aimed at improving the quality of life and should be promoted as such. **They should also take into account the need to ensure equal access to modern technologies for all social groups.** Otherwise, socio-economic inequalities, which have been widening for a long time, will increase even further.

According to the participants, a favourable direction for the development of the energy sector in Poland is to increase the share of energy based on renewable sources. However, the ability of such sources to meet the energy needs of the whole country raises considerable doubts, hence the need to diversify energy production and base it on several independent components, such as renewable

sources, gas, nuclear energy or conventional energy still based on coal. At the same time, the respondents claim that they do not have objective knowledge regarding the effectiveness, health and environmental impact and the final energy balance of alternative energy production technologies, which puts their final effectiveness into question (the research was conducted in a period when the Polish government decided to slow down the significant growth of individual photovoltaic installations under pressure from the energy industry - this was reflected in an increase in social scepticism towards this solution).

Energy diaries

It can be said that the perception of the vision set out in the energy diaries was very similar in all the groups carried out. The respondents commented in a similar way on the ideas contained in the diaries and paid attention to the same risks arising from the possibility of implementing them.

For the majority of participants, from both rural and urban areas, **the first impression upon learning about the vision presented in the household energy diaries was negative.**

Participants indicated the following changes that would be difficult for them to accept and implement in their daily lives, even in such a distant perspective as 9 years:

- **The need for radical change in lifestyles, to which participants mostly react negatively**

It was pointed out that Poles highly value the space of personal freedom. After years of living in a country belonging to the Soviet bloc (characterised by communalisation of goods and subordination of individual needs to the interest of the whole), one of the basic values professed by the Polish society is individualism and the ability to freely decide about one's life. The vision presented in the diaries, on the other hand, is based on community action and mutual cooperation for the benefit of the local community. It also assumes a strong neighbourhood relation, which contradicts the respondents' experiences from their place of residence. **The respondents point that extreme individualism is so strongly rooted in the Polish national character that planning long-term activities based on community values usually has no chance of success.** Negative opinions in this area were strengthened by the feeling that the vision presented in the diaries imposes a mechanical and prescriptive model of functioning of individuals and the necessity to submit to top-down regulations (often recurring associations with Orwell's literature and the reality of sects).

- **The concept of creating and using community resources and goods**

The use of common goods is unambiguously negatively associated with the past era of the socialist economy. **It is pointed out that the community model in practice results in a widespread lack of care for the common good and low efficiency of management,** which brings more harm than benefits, both in the individual and collective perspective.

Moreover, Poland is still a developing country - the characteristic tendency of its inhabitants is to constantly increase their wealth. In the context of historical experience, Poles would find it difficult to resign a model of life based on private property. This opinion is common among participants representing various age and social groups.

- **A model of reduced mobility (online shopping, teleworking)**

Based on their own experiences during the pandemic, participants were negative about the idea that limited mobility would become common. They pointed out that the classic work-shopping model has important affiliation functions, the abandonment of which would entail negative psychological and social consequences. The environmental benefits resulting from the spread of the remote model would not compensate for the resulting social losses.

The respondents were clearly positive about the concept of increasing the share of renewable sources in the energy system. They indicated that this is the most beneficial direction of energy development at the level of individual households, in line with the generally accepted concept of maximising the use of local resources.

The subject of laboratory food production is highly controversial. **Only some of the respondents were aware of the negative impact of mass animal farming on the environment.** A small group of participants also criticised the current meat production model on humanitarian grounds. These people accepted the vision of test-tube meat as a solution to the problems mentioned above. However, **the majority of respondents** (mainly men and older people) **described this type of production as incompatible with nature and potentially harmful to health.**

Ideas related to transport directions were received more positively. The visions contained in the diaries were described as less utopian compared to those concerning the household. **It was emphasised that some of the solutions presented (such as the introduction of electric buses and the expansion of the cycle path network) are already being implemented, especially in urban areas.**

Respondents agree that emphasis should be placed on the development of public transport, which is seen as a tool for equal opportunities. **This need is particularly urgent in the Polish rural area, where public transport is currently of very poor quality and requires large investment outlays.** In urban area, on the other hand, it does not arouse any major objections, therefore the idea of limiting the traffic of cars with combustion engines meets with a much higher level of acceptance in urban areas than in rural, where owning a car is currently (and most probably will be in the future) the condition for preventing transport exclusion. It should be emphasised, however, that all car owners, regardless of their region of residence, cannot imagine giving up the use of a private vehicle altogether. **Loyalty of some participants to cars with combustion engines is surprisingly strong; nevertheless, it has been widely claimed that the spread of electric vehicles seems to be a natural consequence of technological development.** However, the costs of implementing such a change on a large scale and its final environmental impact are questionable. As in the case of renewable energy, the respondents claim that only the future will show to what extent new technologies will be able to limit people's negative impact on the environment (the question of costs of production and utilisation of new equipment).

Assessment of individual energy diary elements - household

Building modernisation	<p>Solution described as very attractive and desirable in all surveyed groups from rural areas.</p> <p>Common lack of belief in the possibility of comprehensive implementation of this task within the next 9 years.</p> <p>Requires involvement of significant public funds.</p>
Working and shopping online	<p>Commonly referred to as a negative vision of the future (carries negative psycho-social consequences).</p> <p>the other hand, it is pointed out that it is a beneficial solution for older people or those with reduced mobility.</p>
Intelligent installations and equipment	<p>A vision with advantages and disadvantages. It certainly improves the comfort of everyday life, although some respondents claim that it introduces the necessity to subordinate everyday life to predetermined regulations.</p> <p>leads to excessive automation and dependence of the</p>

	inhabitants on technology.
energy from community-owned sources	<p>The idea is acceptable for smaller communities. People from rural areas were more often interested in this solution, because of the need to look for alternative and economically efficient solutions for energy production.</p> <p>In the case of large communities, this solution has been described as utopian due to considerable social resistance and the impossibility of respecting the rules of using and maintaining the installation.</p>
Different energy tariffs	<p>A controversial issue. For some participants, the solution known from autopsy (cheaper night tariffs) did not generate much interest.</p> <p>There were doubts about the technical possibility of using this solution on a wider scale due to the quality of electrical installations in buildings.</p> <p>The solution described as unfair from the perspective of working people.</p>
Community vegetable crops	<p>Lack of understanding of the relationship between community vegetable growing and reduction of energy consumption.</p> <p>The solution described as attractive but unrealistic due to social (lack of communication between neighbours) and technical conditions (lack of space, urban air pollution).</p>
Community-owned equipment	<p>The idea does not find much approval among respondents. Generally in high age groups individual ownership is preferred. In the case of the 3D printer, there was an additional problem of lack of knowledge about the possibilities of its potential use.</p>
Food grown in a laboratory	<p>The idea is much more likely to be accepted by women than men. Women are more sensitive to food quality and issues related to the consequences of mass animal production. For men, these issues seem less important. Instead, they emphasise the importance of the natural origin of food. Older people have a similar attitude.</p>

Assessment of individual elements of the energy diaries - transport

Electric vehicles	<p>The spread of electric buses is a real vision, already implemented in many cities.</p> <p>Participants commonly expressed their scepticism as to the possibility of popularisation of electric cars on a wider scale in such a short period of time (high purchase costs, lack of infrastructure to operate this type of vehicle). Moreover, attention was drawn to potential threats to the environment resulting from the production and disposal of electric batteries.</p>
Universal accessibility of public transport	<p>The idea already implemented in many cities and perceived as utopian in rural areas (dispersed housing). The problem is</p>

	particularly highlighted by people with disabilities and their carers who treat cars as an indispensable tool to guarantee quality of life.
sharing	the idea is known to all respondents but they treat it with reserve (preferring individual ways of transport).
modernised train travel	the idea is considered attractive provided the railway infrastructure is thoroughly modernised and a high level of travel comfort is ensured. However, it is not likely to become the dominant travel model.
eliminating combustion engine cars from cities	idea that is impossible to realise in such a short space of time due to the high preference for combustion cars, especially among young people and men in general.
15 minute suburb	in smaller cities, the model already exists. Judged as attractive. On the suburb of large cities difficult to implement due to lack of urban planning and chaotic development.

Needs

The participants believe that members of vulnerable and excluded groups should not bear the economic costs of the energy transition. The financial responsibility for the changes should lie with state institutions and the European Union. In a situation where the European Union imposes a wide scope and fast speed of modernisation of the energy sector, it is obliged to participate in, or even fully cover the costs of transformation in the Member States which have no chance of meeting this challenge on their own. **Forcing costly solutions on countries that are much richer than Poland, without taking into account the economic possibilities of Polish society, is seen as unfair and potentially leading to an increase in differences in the quality of life between the inhabitants of Poland and other EU countries.**

The introduction of further taxes as a way of financing the energy transition was met with opposition by survey participants. This solution is perceived as unfair to countries such as Poland, whose energy system is based on fossil fuels, so in practice their inhabitants do not have the possibility to resign from products produced on the basis of dirty fuels and will be forced to bear the costs of the transition to a higher proportion.

The income from any taxes collected from producers using dirty energy should be used to modernise the energy sector and finance innovation in this area. However, due to a general lack of trust in state institutions, there are concerns about the possibility of spending the funds collected fairly and in accordance with the objectives. On the other hand, the model of redistribution of collected funds among the general public is widely criticised as inefficient and not motivating to change the way of life.



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Annex 2 Policy Recommendations Paper - POLAND

FETA PROJECT

Policy Recommendations Paper

POLAND

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1. Summary of the expert sessions

1.1 List of participants

Two expert meetings were held on 9 March and 23 March 2022. Ten experts, associated with NGOs, academia, business, as well as local government, with professional experience in energy, social and mobility policies, participated in the meetings:

- **Patryk Białas** - Lawyer by education, with a focus on regional development policy. Vice-President of the board of the Congress of Urban Movements, co-founder of the Silesian Climate Movement, national coordinator of the Climate Reality Project leaders, coordinator of the Clean Air Campaign in Katowice, former activist of the Polish Smog Alarm. Director of Innovation and Competence Centre in Science and Technology Park Euro-Centrum in Katowice. Councillor of the City Council of Katowice.
- **Radosław Gawlik** - Ecological activist. In the past Deputy Minister of Environment. He co-created important legal acts for ecology, including a provision on sustainable development in the Constitution of the Republic of Poland. Currently, he is the head of the Ecological Association "Eco-Union". within which he implements projects in the field of ecology, sustainable rural development, international cooperation and promotion of green policies.
- **Dr. Andrzej Kassenberg** - Expert on sustainable development policy at national and regional level. Since 1980 he has been involved in the environmental movement, including the Polish Ecological Club. For many years he has been engaged in scientific activities in the field of sustainable development, currently specializing in energy and climate protection issues. He was the initiator and first chairman of the Commission for Environmental Impact Assessment at the Minister of Environment in Poland. In 1991-1995 and 1999-2000 he was a member of the Council for Environment and Social Issues at the President of the European Bank for Reconstruction and Development.
- **Szymon Liszka** – since 2005 President of the Polish Foundation for Energy Efficiency (FEWE). His professional experience covers both the issues related to energy policy, local energy planning, programming of projects in the field of energy efficiency improvement and clean energy technologies based on innovative financing methods as well as detailed problems related to energy audits, energy diagnostics of buildings and verification of the effects

of actions taken. He is also the President of the National Association "Energy and Environment Protection (SAPE-POLAND).

- **Blanka Romanowska** - She manages the Department of Infrastructure and Environment in the first Polish Metropolis - Upper Silesian and Zagłębie Metropolis. She has many years of experience in implementing projects in the field of environmental protection, including active participation in the creation of the anti-smog resolution for the Silesian Voivodeship, as well as implementation of waste management systems in communes. In the Marshal's Office of the Silesian Voivodeship, she managed a team responsible for drawing up planning documents in the area of the region's environmental policy.
- **Bożena Ryszawska, PhD** - Professor at Wrocław University of Economics. Her scientific work focuses on the problems of green economy, sustainable development, climate change and energy transition and green finance. She created Green Team responsible for green transformation of Wrocław University of Economics. She is a member of the European Association of Environmental and Resource Economists and the Association of Sustainable Finance and Accounting. She is in the advisory team to the President of Wrocław for air quality and energy efficiency.
- **Łukasz Sajewicz** - Heating sector specialist with over 30 years of experience. Author and co-author of many RES initiatives undertaken and implemented by VIESSMANN, a company with which he has been working for over 25 years. Conducts workshops and seminars on heating/cooling with RES hybrid solutions.
- **Urszula Stefanowicz** - Project coordinator, specialist in climate policy and low-carbon economy development. Since 2008, she has been leading projects on climate policy and low-carbon economy development in the Polish Ecological Club in the Mazovia Region; an observer of the UN international climate negotiations, she participated in 7 Conferences of the Parties to the UNFCCC.
- **Piotr Szymański, PhD** – lecturer at the Wrocław University of Economics in the Department of Economics and Business Organisation. His scientific output includes publications on energy communities, energy transition and renewable energy sources.
- **Dr. Łukasz Trembaczowski** - sociologist, lecturer at the Faculty of Social Sciences of the University of Silesia in Katowice, scientific coordinator of the Just Transition Research Group.

1.2 List of policy recommendations classified by priorities

11 recommendations were proposed, 6 in the field of housing and 5 in the field of transport.

1.2.1 Housing

The recommendations were ranked from highest impact to lowest taking into account the total costs of implementing the recommendations:

- Government support for the development and use of virtual prosumers and collective prosumers.
- Information campaign among housing association managers to encourage investment in the installation of photovoltaic panels in a hybrid system combined with heat pumps for DHW.
- Building support programmes for vulnerable groups by the government in consultation with local governments and final beneficiaries taking into account the specificities of each.
- Establish support mechanisms to promote comprehensive thermo-modernisation.
- Investment in high energy standard social housing - extending the formula of Social Housing Associations.
- Development of a network of local energy spokespersons together with the creation of regional knowledge-sharing platforms for citizens.

1.2.2 Transport

The recommendations have been ranked from highest impact to lowest, taking into account the total costs of implementing the recommendations:

- Development of inter-municipal transport agreements among local authorities building one common transport network for the area.
- Further development of e-offices including information and promotion campaign in poorly connected areas.

- Creation of standards for the design and implementation of investments focusing on the elimination of barriers in public spaces.
- Introduce tariffs on fuel from Russia, and use the proceeds to support energy-poor groups.
- Development of cycling and pedestrian infrastructure with simultaneous creation of bicycle and pedestrian advocates in municipalities to express the needs of inhabitants.

2. Overview of current policies and regulations in Poland

When analysing the policies and regulations in Poland, the legislation and policies at the national level relevant to the Energy Transformation perspective were taken into account. It should be noted, however, that more and more policies and plans are also created at the regional level, creating local energy plans - assumptions, plans for heat, electricity and gas fuel supply, climate change adaptation plans, low-emission economy plans, low emission reduction programmes, SEKAPs or sustainable transport plans, where references to the energy transformation can also be found. In addition, there are documents directly dedicated to energy transformation in individual regions of the country, e.g. "Territorial plan of equitable transformation of Eastern Wielkopolska"; "Territorial plan of equitable transformation of Silesian Voivodship 2030" or "Social Territorial Plan of Equitable Transformation of Walbrzych Subregion".

2.1 Key documents relating to the Energy Transition in Poland

- **Poland's Energy Policy 2040 (PEP2040)** ¹

On 2 February 2022, Poland's new energy policy in the perspective until 2040 was adopted.

PEP2040 provides a clear vision of Poland's energy transition strategy. The policy takes into account the scale of challenges in adapting the national economy to EU regulatory considerations related to the 2030 climate and energy targets, the European Green Deal, the COVID pandemic recovery plan and the pursuit of climate neutrality in line with national capabilities, as a contribution to the Paris Agreement.

PEP2040 is one of nine sectoral strategies integrated with each other that stem from the Polish

¹ [Polityka energetyczna Polski do 2040 r. - Ministerstwo Klimatu i Środowiska - Portal Gov.pl \(www.gov.pl\)](https://www.gov.pl/polityka-energetyczna-polski-do-2040-r.-ministerstwo-klimatu-i-srodowiska-portal-gov-pl)

Strategy for Responsible Development. Additionally, the document is also consistent with the National Energy and Climate Plan 2021-2030.

The document identifies three pillars of PEP2040: fair transition, zero-emission energy system, good air quality. A territorial approach was presented and funding sources for PEP2040 were indicated.

- **National Energy and Climate Plan 2021-2030 (KPEiK)**

On 30 December 2019, the National Energy and Climate Plan 2021-2030 was submitted to the European Commission. The document sets the main targets for Poland:

- Reduction of greenhouse gas emissions by 7% in non-ETS sectors compared to 2005 levels,
- RES share in gross final energy consumption of 21-23%,
- increase in energy efficiency by 23% compared to PRIMES2007 projections,
- to reduce the share of coal in electricity production to 56-60%.²

- **National Urban Policy 2030³ (KPM2030)**

Work on the "National Urban Policy 2030" is underway. (KPM2030). The most important challenges of the document will be to bring order to spatial chaos and adaptation to climate change. The KMP 2030 defines directions of future social, economic and spatial development of cities and diagnoses the most important problems and challenges. Among the most important, it lists the quality of the natural environment and adaptation to climate change, urban mobility systems and traffic safety, promotion of social activities and problems of suburbanisation and spatial order. The document is planned to be adopted by the Polish government in June 2022.

2.2 Housing

- **National Housing Program⁴**

On 27 September 2016, the National Housing Programme was adopted, which sets the main directions for the implementation of the state housing policy in the perspective until 2030. The main

² [Krajowy plan na rzecz energii i klimatu na lata 2021-2030 - Ministerstwo Klimatu i Środowiska - Portal Gov.pl \(www.gov.pl\)](https://www.gov.pl/web/gov/krajowy-plan-na-rzecz-energii-i-klimatu-na-lata-2021-2030)

³ [Konsultacje publiczne projektu Krajowej Polityki Miejskiej 2030 - Ministerstwo Funduszy i Polityki Regionalnej - Portal Gov.pl \(www.gov.pl\)](https://www.gov.pl/web/gov/konsultacje-publiczne-projektu-krajowej-polityki-miejskiej-2030)

⁴ [Narodowy Program Mieszkaniowy - Ministerstwo Rozwoju i Technologii - Portal Gov.pl \(www.gov.pl\)](https://www.gov.pl/web/gov/narodowy-program-mieszkaniowy)

objectives of the programme are:

- Increase access to housing for people with incomes that do not allow them to buy or rent on a commercial basis.
- To increase the possibility of satisfying basic housing needs of persons threatened with social exclusion due to low income or particularly difficult life situation.
- Improvement of housing conditions of the population, technical condition of housing stock and increase of energy efficiency.
- **Act of 21 November 2008 on supporting thermomodernization and renovations and on central emission records of buildings⁵**

The Act, together with its subsequent amendments, defines financing from the Thermomodernization and Renovation Fund of a part of the costs of thermomodernization and renovation undertakings and low-emission undertakings. The document also contains regulations concerning the functioning of a central register of building emissions. The act also gives municipalities the possibility to create low-emission programmes in order to reduce emissions and improve air quality in the municipality, in particular through the implementation of low-emission undertakings for the benefit of the least affluent households.

- **Act of 10 April 1997. - Energy law⁶**

The Act and its subsequent amendments set out the principles for the development of the state's energy policy, the principles and conditions for the supply and use of fuels and energy, including heat, and the activities of energy enterprises, as well as defining the authorities competent in matters of fuel and energy management. The Act introduces a definition of a vulnerable recipient of electricity and gas along with support mechanisms.

- **The Energy Efficiency Law⁷**

The Law of 20 May 2016 and its subsequent amendments allow anyone who meets certain requirements (energy efficiency audit for a specific investment) to receive the benefit of property rights resulting from energy efficiency certificates (commonly known as white certificates).

⁵ [Obwieszczenie Marszałka Sejmu Rzeczypospolitej Polskiej z dnia 23 lutego 2021 r. w sprawie ogłoszenia jednolitego tekstu ustawy o wspieraniu termomodernizacji i remontów oraz o centralnej ewidencji emisyjności budynków](#)

⁶ [Ustawa z dnia 10 kwietnia 1997 r. - Prawo energetyczne. \(sejm.gov.pl\)](#)

⁷ [Obwieszczenie Marszałka Sejmu Rzeczypospolitej Polskiej z dnia 14 października 2021 r. w sprawie ogłoszenia jednolitego tekstu ustawy o efektywności energetycznej](#)

- **Act of 7 July 1994. - Building Law⁸**

The Act, together with all its implementing acts, regulates activities covering matters of design, construction, maintenance and demolition of buildings and sets out the rules for public administration bodies in these areas.

2.3 Transport

- **Sustainable Transport Development Strategy 2030 (SRT2030)**

On 24 September 2019, a resolution on the adoption of the "Strategy for Sustainable Transport Development until 2030" was adopted. The main objective of the strategy is to increase the country's transport accessibility and improve the safety of traffic participants and the efficiency of the transport sector by creating a coherent, sustainable, innovative and user-friendly transport system at the national, European and global levels.⁹

- **Act of 16 December 2010 on public collective transport¹⁰**

The Act defines the principles of organisation and operation of regular passenger transport in public collective transport carried out on the territory of Poland and in the cross-border zone, in road, railway or maritime transport. Additionally, the Act defines the principles of financing regular passenger transport in public collective transport in the scope of public utility transport.

- **Plan for sustainable development of public collective transport with regard to transport network in inter-voivodship and international passenger transport by rail**

The plan shall indicate the principles for the operation of inter-voivodship and international passenger services in rail transport to be operated as public utilities within the framework of public collective transport as well as their financing from public funds, the manner of provision, the forecasted demand and the potential directions for development.¹¹

⁸ [Ustawa z dnia 7 lipca 1994 r. - Prawo budowlane. \(sejm.gov.pl\)](http://sejm.gov.pl)

⁹ [Strategia Zrównoważonego Rozwoju Transportu do 2030 roku - Ministerstwo Infrastruktury - Portal Gov.pl \(www.gov.pl\)](http://www.gov.pl)

¹⁰ [Ustawa z dnia 16 grudnia 2010 r. o publicznym transporcie zbiorowym \(sejm.gov.pl\)](http://sejm.gov.pl)

¹¹ [Obwieszczenie Ministra Infrastruktury z dnia 28 marca 2018 r. w sprawie ogłoszenia jednolitego tekstu rozporządzenia Ministra Transportu, Budownictwa i Gospodarki Morskiej w sprawie planu zrównoważonego rozwoju publicznego transportu zbiorowego w zakresie sieci komunikacyjnej w międzywojewódzkich i międzynarodowych przewozach pasażerskich w transporcie kolejowym \(sejm.gov.pl\)](http://sejm.gov.pl)

3. Explanation of the policy recommendations made by the experts

3.1 Housing

- **Recommendation 1: Government support for the development and use of virtual prosumers and collective prosumers.**

From April 2022, an amendment to the Renewable Energy Sources Act comes into force, through which a collective prosumer is introduced. A collective prosumer is an end user who generates energy for their own needs in a microinstallation or small installation connected to the distribution network through the internal electrical installation of a multi-apartment building. Thanks to this change, a housing cooperative or community that decides to build a photovoltaic installation on its land or roof can transfer the produced electricity to individual residents of the community, and not only use it in common parts, e.g. for lighting corridors. Thus, households that are part of larger housing communities will be able to effectively reduce their electricity expenses. Widespread use of the collective prosumer will allow for real reductions in electricity costs among the residents of housing communities, especially when electricity is used to heat the premises. A virtual prosumer, on the other hand, is an entity which uses the electricity produced by an installation far away from the target location where the electricity is used. This solution can be used by all entities that do not have enough space or, for various reasons, cannot install an installation on the roof of the building, but have, for example, a plot of land where such an installation could be built. This solution could be used by small and medium-sized companies and local government units.

Therefore, the state should create programmes to support the development of a collective and virtual prosumer system through incentive systems.

- **Recommendation 2: Information campaign among housing association managers to encourage investment in the installation of photovoltaic panels in a hybrid system combined with heat pumps for DHW.**

As explained in recommendation 1, the introduction of the concept of the collective prosumer to the Polish law allows for the use of energy generated by all residents of a housing community or cooperative. Thus, an information campaign should be conducted to encourage managers to plan and implement this type of investment, especially in places where it is only possible to use heat sources using electricity.

- **Recommendation 3: Building support programmes for vulnerable groups by the government in consultation with local governments and final beneficiaries taking into account the specificities of each.**

Currently in Poland most of the support and incentive programmes are built on a national level without taking into account the needs and specificity of regions. It would be necessary to create support mechanisms dedicated to particular regions, taking into account the voice of the final beneficiaries and self-governments. In addition, it should be noted that municipalities often do not use the currently available mechanisms due to barriers related to the need to have own contribution when using the programmes and fear of high operating costs.

- **Recommendation 4: Establish support mechanisms to promote comprehensive thermo-modernisation.**

At present, programmes in Poland which encourage action to improve energy efficiency and modernise buildings, particularly single-family houses, only support individual investments without a holistic approach to buildings, such as the Clean Air Programme which offers grants for replacing heat sources, or the My Current programme which makes it possible to obtain grants for PV installations.

A system of support for comprehensive thermomodernisation financed by the State should be created, as it brings the best results in the long term. At the same time, the created system should take into account the possibility of dividing the actions into years, so that vulnerable groups have the possibility to carry out investments in stages, dividing them into smaller ones, gradually improving thermal comfort and reducing energy consumption.

- **Recommendation 5: Investment in high energy standard social housing - extending the formula of Social Housing Associations**

Social housing associations are public or private non-profit companies or cooperatives, which obtain funds for housing investments from the National Housing Fund. Their main task is to build affordable

housing with moderate rents, modernise their stock and administer their buildings. In 2021, 1,239 flats were completed, with 234,000. Total dwellings delivered. In 2020, it was 1,508 dwellings, with 221 Thousand dwellings completed. In previous years, these values do not change significantly. With the rising cost of mortgages in Poland with simultaneous high rental prices on the private market, social housing may be a recipe for this growing problem. Additionally, if this formula is developed, it would be necessary to introduce high energy standards for newly constructed buildings of this type, which would in effect be passive buildings.

- **Recommendation 6: Development of a network of local energy spokespersons together with the creation of regional knowledge-sharing platforms for citizens**

The state should create a structure and standards for action and support the process by subsidising local governments to build up a cadre of energy advisors who will be responsible for advising and educating on the energy transformation in municipalities. At present, awareness of the Energiewende and issues related to improving energy efficiency is still low in Poland. Poles should be made aware of the challenges that await them in connection with the changes that have already begun or will begin in the near future. At the same time, we should point out to them the solutions that will allow them to go through these changes more smoothly, and which are within their reach.

3.2 Transport

- **Recommendation 1: Development of inter-municipal transport agreements among local authorities building one common transport network for the area**

Entering into agreements will allow municipalities to build better quality transport for their residents. The system is then more integrated and tailored to passengers' needs. Integration also makes it easier to plan the further development of the transport network.

- **Recommendation 2: Further development of e-offices including information and promotion campaign in poorly connected areas.**

For several years, an electronic platform has been developed in Poland, the e-office, thanks to which it is possible to handle matters in the office, via the Internet without the need for physical contact with the office. It is recommended that the platform be further developed so that all matters connected to the municipal level can be handled via the electronic path. At the same time, an information campaign should be implemented in municipalities to encourage residents to use the

electronic form for handling official matters.

- **Recommendation 3: Creation of standards for the design and implementation of investments focusing on the elimination of barriers in public spaces**

Poland is one of the few European Union countries that has not developed, in a comprehensive manner, a range of solutions to accommodate the needs of people with various types of disabilities. Some local authorities try to act independently in this area, issuing appropriate regulations or standards. These actions do not favour unification of standards of support offered to persons with disabilities and are characterized by a significant degree of decentralization.

- **Recommendation 4: Introduce tariffs on fuel from Russia, and use the proceeds to support energy-poor groups.**

Until Russian oil is completely phased out, tariffs should be introduced, with the funds raised supporting vulnerable groups in adapting to the changes brought about by the energy transition.

- **Recommendation 5: Development of cycling and pedestrian infrastructure with simultaneous creation of bicycle and pedestrian advocates in municipalities to express the needs of inhabitants**

Elements of infrastructure such as bicycle lanes, contraflow lanes or speed restricted zones are becoming more and more common in Poland, but still the awareness of the existence of methods for organisation of cycling and car traffic is insufficient. The selection of a specific form of organisation in a given place should be made on the basis of analyses of traffic density, speed of vehicles and the needs of cyclists and pedestrians supported with prior consultations. In order to really adapt the infrastructure and its development to the needs of pedestrians and cyclists it is necessary to appoint their spokespersons in municipalities, who will be the voice of the community, indicating to decision makers the desirable directions of changes and development.

4. Communication

How to approach the detailed explanation of the policy proposals to the focus groups.

This aspect was not addressed in the expert meetings.

5. Other relevant findings, recommendations or observations raised during the Meetings

It was pointed out that access to clean energy should be considered a common good, and therefore that the approach to the energy transition should be remodelled to define it as a citizen's right to clean energy. This will force the State to "take care of the subject".



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Annex 3

Personas –

POLAND

Persona 1

Woman with disability



Krystyna

Who I am:

Gender: Female
Age: 51
Education: Secondary
Position: unemployed
Income: Social pension (1067 PLN net)

Place of residence: Łódź (outside the city centre in a multi-family building heated by district heating, with insulated walls and replaced windows. She uses gas to prepare meals).

Family: Lives with husband

What does she think of Energy Transformation?

She understands the concept of energy transition as changing the energy production system in such a way as to reduce CO2 emissions and air pollution.

She believes that the energy transition is inevitable, but is uncertain and doubts how the objectives should be achieved and which fuels and technologies pose a real threat to the environment.

Just Transition

Krystyna believes that in order for ENERGY TRANSFORMATION to be equitable, it is necessary to prevent the exclusion of older people and people with disabilities from digital solutions, which will develop more and more with the transition. Care must be taken to increase digital competence for these groups.

Fears, Challenges, Pain points

It is difficult for her to move around the city. Too few parking spaces dedicated to a person with a disability, plus constant renovations make it difficult to move around. Krystyna walks with a cane, but she fears that if she had to use a wheelchair, many places would suddenly become inaccessible to her.

What does she think of the Polish energy sector?

She recognises the benefits of building a nuclear power plant, but her biggest fear is the people who would manage such a plant and the lack of full information about what is happening in the plant.

At the same time she thinks that we will not be able to move away from coal within 10-20 years, but we will import even more coal from Russia.

In her opinion Polish coal is a valuable fuel and the country should base its energy system on this raw material as long as it is available.

Climate change approach

She agrees that climate change is a real problem for the world and the country.

She believes that the problem is not an issue of fuel, but of the technology to burn it. She is convinced that the pollution generated by car traffic is much more environmentally damaging.

Krystyna believes that climate change can be slowed down by reducing energy consumption, but individual actions do not have a major impact on global change. Nevertheless, she would be able to give up her car if the public transport network was sufficiently developed and adapted to people with disabilities.

Quote:

"In my actions I am primarily guided by economics, ecology is a secondary thing. Unfortunately, the budget is very important. I know that health is also very important, but without money it is impossible. Ecology is more when we talk about waste, about waste segregation."

Persona 2

Retired Miner



Waldemar

Who I am:

Gender: Male

Age: 60

Education: Vocational - Mining

Position: pensioner

Income: Retirement pension (3618 PLN net)

Residence: Katowice - lives in an uninsulated tenement house. He recently replaced his heat source with a coal boiler. He did not consider any other fuel, because he wanted to continue benefiting from his coal allowance, which he is entitled to after years of working in a mine.

Family: He lives only with his wife, but has two adult sons. One works at the mine where Waldemar worked, the other is a manager at an automotive production company.

What does he think of Energy Transformation?

He believes that the energy transition is one of the most important challenges Poland will have to face in the coming decades.

The government should be responsible for presenting a concrete vision for the energy transition and creating the economic conditions so that it is worthwhile for citizens to .

Just Transition

According to Waldemar, the basis for a fair transition should be free and universal access to reliable and objective knowledge on the energy balance of individual energy production techniques and means of transport.

Fears, Challenges, Pain points

Waldemar appreciates the feeling of freedom, freedom of choice and privacy and is worried about visions that impose restrictions on water consumption, that force him to give up his car for public transport or car sharing, or that force him to share some equipment such as a printer within a small community.

What does he think of the Polish energy sector?

In his opinion, the transition away from coal should be implemented in a planned and systematic manner. Poland has no other sources than coal, so there is currently no alternative to this fuel. However, coal resources will soon be exhausted, so other sources of energy should be sought.

Unfortunately, there are no perspectives for the construction of a nuclear power plant, so Waldemar believes that coal power plants should be gradually replaced by dispersed alternative sources.

In addition, he believes that the reduction in coal extraction, if it is carried out slowly and in a planned manner, should not significantly change the quality of life in Silesia. Employment in the mining industry is already being systematically reduced.

Climate change approach

Waldemar agrees that global warming is a fact and its effects are visible even in our country in the form of weather anomalies.

However, he doubts that the changes are really man-made - perhaps it is a natural cycle that has been happening in the world for millennia.

Moving by car on a daily basis, he is of the opinion that if a relatively modern vehicle is used, the environmental impact of this type of transport is minimal.

Quote:

"I associate all these ideas with some kind of communism: a communal garden in front of the block, a printer. A queue here, a queue there. The caretaker would have to sit here and watch over it."

Persona 3

Single mum



Marzena

Who I am:

Gender: Female

Age: 38

Education: High school

Position: seller in a discount store

Income: (2760 PLN net + social support 500 plus for each child)

Residence: Lubelskie Voivodeship, Puławy (population approx. 47 thousand) - a multi-family block of flats insulated with plastic windows. Heating from the municipal heating network. The heat supplied to the building is waste from the technological process of fertiliser production at the nitrogen plant in Puławy. He therefore perceives it as ecological energy.

Family: She has a 14-year-old daughter and a 9-year-old son, whom she raises alone, with occasional help from her mother.

What does she think of Energy Transformation?

She believes that a change in the energy system is inevitable, but the necessity of these changes results from EU directives and not from Poland's real needs. Marzena believes that basing energy production on coal does not have such negative consequences for the environment as the EU presents.

She agrees that energy transition is an important issue in the context of inevitable changes in the Polish energy system, although in everyday life she does not pay special attention to this topic.

Just Transition

Marzena believes that people who use clean energy should be able to benefit from tax breaks or other economic advantages. This would be an incentive to change the habits of those who buy what she calls "dirty products". She is against the idea of giving money to everyone equally, which is why, in her opinion, there should be a fund for investments in new technologies (very clear and narrowly defined goals = greater control over how the money is spent).

What does she think of the Polish energy sector?

In Marzena's opinion, Poland has very large coal reserves, which generates a large number of jobs in the mining industry. Giving up coal mining would cause a social and economic crisis, especially in the mining regions of the country. There is also a lack of alternative fuels to coal. The energy transition must include a long transition period to allow time for technological and social change.

She believes that there is a lack of objective knowledge and information about which energy solutions are better for Poland.

Quote

"My knowledge is too little to comment on carbon, and what impact it has on the environment. I've used coal for a long time, so I'm used to it. But I don't know if I'm for or against it, because I don't know what the difference is when burning coal in different boilers."

Fears, Challenges, Pain points

The labour market is one of her main concerns. For women, job offers in her city are limited to the retail sector, where wages in Puławy are very low. Many retail and service outlets have suspended operations due to the pandemic.

She is also worried about rising food prices.

An additional issue that raises her emotions is the billing with the heat supplier, which she finds unclear and unfair. She does not think it is worthwhile to spend time on activities aimed at saving heat, as this does not lead to a financial benefit.

Climate change approach

Marzena is of the opinion that solid fuels burned under appropriate conditions do not have a negative impact on the environment, and therefore believes that Poland, due to its large resources of solid fuels, should use them in the energy system as long as possible.

In her opinion, limiting climate change requires systemic and individual actions, such as rational spatial planning, education of the young, changing the mentality of the elderly, waste segregation, limiting water consumption limiting travel.

Persona 4

Mum of a child with a disability



Zofia

Who I am:

Gender: Female

Age: 46

Education: vocational

Position: not working - taking care of her son

Income: receives social benefits for carers of persons with disabilities (Nursing benefit: 2119 PLN per month)

Residential address: Małopolskie Voivodeship, the commune of Myślenice, village of Jawornik (pop. approx. 3,000) - a single-family insulated building with an old heat source in which one can burn different types of fuel. Most often, however, she heats the house with wood.

Family: She has a husband and two children, including a son with disabilities. Her mother lives with them

What does she think of Energy Transformation?

She is sceptical about the energy transition process. It believes that individuals can no longer do anything to curb climate change, and that countries as large actors are largely powerless to do anything about it.

Just Transition

A just energy transition is one that offers a free choice and does not impose anything by force.

Zofia considers it unfair to impose the necessity of giving up one's own resources (in this case wood) in favour of more expensive solutions which do not guarantee energy security.

People in specific life situations should be treated individually.

In her opinion, the main factor that defines fairness is the involvement of the state in the implementation of the energy transition - creating tools and instruments through which individual users will be able to adapt.

What does she think of the Polish energy sector?

When thinking about energy, Zofia refers primarily to her local community. She criticises legal solutions forcing a change in the way heat is generated on people who have access to their own fuel (many people she knows have private forests or access rights). She believes that in villages, locally available fuel resources should be used, while the problem of using clean fuels should be solved primarily for urban areas.

Fears, Challenges, Pain points

As a mother of a disabled child, she is most concerned about the quality of health care and the amount of the care allowance, which, because she cannot work, constitutes an important part of the household income.

For the same reason, she is very concerned about giving up her car for public transport. She believes that in places such as Jawornik it is not possible to move efficiently between villages without a car.

Climate change approach

Zofia admits that global climate change is visible and strongly felt. She herself observes a disruption of the seasons, a blurring of the transitional seasons, but in her opinion climate change can no longer be stopped. She is sceptical about the idea that individual burning of coal or wood in domestic fuel boilers has significant environmental consequences. She points to the overproduction of plastic and the growing problem of plastic waste disposal as the main culprits.

Quote

"Industry, technology, more cars. More electricity is used than before, and there used to not be as much industry as there is now. We buy more things, so there is more rubbish. Always new, always different, a disease of humanity."

Persona 5

Male from rural area



Krzysztof

Who I am:

Gender: Male
Age: 44
Education: Higher
Position: Shop manager in Olsztyn
Income: (3370 PLN net)

Residence: Warmian-Masurian voivodship, the district of Olsztyn, village of Dywity (about 2 000 inhabitants) - he lives in a single-family building which is not insulated and has not been modernised. He uses wood or coal to heat his home for economic reasons.

Family: He is married with three children. Krzysztof's parents live with them.

What does he think of Energy Transformation?

He believes that this is a necessary step to modernise the economy and reduce its negative impact on the economic and social environment, particularly in Silesia. The Polish economy is dependent on the coal industry, which generates many jobs, so the groundwork should already be done now to prepare alternative jobs for the industries affected.

Just Transition

Krzysztof believes that thorough education of citizens in the field of energy transition should be provided and investments in alternative energy sources should become economically viable from the perspective of the average Polish citizen. The state should take responsibility for its decisions on energy issues. Therefore, as Krzysztof believes, a transparent and accessible system of financial support for new investments should be built for people with difficult economic situations.

What does he think of the Polish energy sector?

Krzysztof is aware that coal deposits in Poland will sooner or later be exhausted, but until this happens Poland should base its energy system on this raw material, as this model guarantees the country's energy security.

He believes that broad prosumer systems should be created, leading to diversification of energy production sources. Moving away from a centralised energy generation model will make Poland less dependent on external suppliers and reduce emissions.

On this issue, he believes that the EU should help Poland to modernise its energy infrastructure.

Fears, Challenges, Pain points

He travels mainly by car, which is the only way to get around town and the surrounding areas due to the lack of a public transport network, and therefore fears that if he did not have a car he would not be able to fulfil his basic needs in this area (commuting to work, school, shopping). He does not believe that a reliable public transport system can be built in rural areas because of the costs involved.

Climate change approach

He believes that human activity is the cause of climate change, but it is difficult for him to determine the scale of this impact.

He believes that human activity can accelerate climate change and that widespread consumption and energy production methods have a significant impact on global warming.

Quote

"I would love to install a heat pump or photovoltaics, but with my consumption, because I have practically everything on electricity except my cooker, I need 9 kW, which is an average cost of PLN 45,000. I'm talking about photovoltaics alone, where a heat pump would cost another 20 to 35 000 PLN. If someone sponsors me from A to Z, I'm happy to replace it, no problem, and they're offering 3,000 zł."