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Processes of decision making on energy issues: micro and macro analysis (the case of Poland 2015)

Introduction

Poland, being a country with population of over 38,5 million and a medium scale economy, is consuming electrical energy at the level of less than 3800 KiloWatHours per capita. Coal is a major energy source in Poland, including electricity generation sector, but many coal burning power plants have been operated for over 30 years, thus they soon will have to be modernized or decommissioned.

In 2014 the Polish Ministry of Economy announced a project of a new energy strategy of Poland up to 2050. Corner stones of the strategy are the reduction of CO_2 emissions and security of supply. In the base-case scenario coal, oil and gas are the main suppliers of energy with gas replacing oil and coal to some extent. About 15% of the energy mix are covered by renewables. In the second scenario 45% to 60% of electricity demand are covered by nuclear, 15% by renewables. Gas, coal and oil cover the remaining 25% to 40% of the electricity mix in equal terms. In the third scenario the major part of energy supply (50% to 55%) is provided by renewables, 30% by gas and the rest by oil (*Projekt Polityki energetycznej Polski do 2050 roku* 2015, pp. 42, 46, 48).

It is the reply for the European Union' framework for climate and energy policy to reduce a greenhouse gas emissions and a renewable energy share target of 27% for the EU countries (*Działania w dziedzinie klimatu. Jak dbać o klimat i środowisko* 2014, p. 8). Implementing these changes in Poland requires the understanding of stakeholders network, the socio-economic context (i.e. employment) and also the public awareness of energy sources and energy needs in the country.

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Conceptual framework – public participation and decision making

Although there has been an increasing emphasis on citizen participation in policy formulation in numerous national and international policy documents (Tacconi 2000; Jayanath 2007), the term participation has many different meanings and a certain level of ambiguity occurs when trying to put "participation" into practice.

Classical typology is presented by Sherry Arnstein (1969), who introduced the idea of a "ladder of participation" and showed different public involvement levels: starting from the manipulation at the lowest level, through some influence on decisions, to the partnership and citizen control at the top of the ladder. This point of view is absolutely new in the countries with communist tradition and gives an opportunity to a variety of interpretations. Participation is usually followed by additional description so that the understanding of the term is clearer: there are civic, social, individual and community participation.

Ellie Brodie et al. (2009) presents classification of three basic types. First is horizontal (or community) participation which is based on actions of individuals in local community or neighbourhoods. Second, vertical (or public) participation means individuals involvement in the activities of democratic structures and state institutions. The third type takes into account individual people's choices (individual participation) to express their expectations as to the nature and type of society in which they want to live (i.e. socially responsible consumption).

From the point of view of the concept of environmental democracy (Mason 1999; Wates 2005) the issues concerning environmental changes should be deliberated and "citizens can propose issues for the political agenda and participate in debate about those issues" (Cohen 2002, p. 152; cf. idem 1997).

Principle 10 of the Rio Declaration, as endorsed by 176 states and the UN General Assembly, is the most widely supported international statement on procedural environmental obligations: "Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and judicial proceedings, including redress and remedy, shall be provided" (Rio Declaration on Environment and Development 1992).

The focus on individual entitlements at the national level is in deference to established state sovereign powers and citizenship rights, yet there is also the acknowledgement that public participation may be needed at other scales of decision-making.

The 1998 (Aarhus) Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, developed like the Espoo Convention by the UNECE, is the most important elaboration of Principle 10 to be found in treaty law. Here procedural entitlements in environmental decision-making move beyond information rights to an expansive notion of public participation (covering specific activities, plans, programs, policies and other legally binding instruments) and accessible review procedures. Much has been made of the ambition of the Aarhus Convention to increase citizen participation, which has clear cosmopolitan potential: a non-territorial notion of the 'public concerned' refers to those natural or legal persons affected or likely to be affected by, or having an interest in, the relevant decision-making (Convention on Access To Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters 1998, Article 2(4)).

Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, usually known as the Aarhus Convention provides for access to environmental information, the right to participate in environmental decision-making, the right to review procedures to challenge public decisions.

Polish law has been implemented and adjusted to the European convention – and from 15 November 2008 there is "The Law on providing information about the environment and its protection, public participation in environmental protection and the Environmental Impact Assessment (Ustawa z 3 października 2008 r. o udostępnianiu informacji o środowisku i jego ochronie, udziale społeczeństwa w ochronie środowiska oraz o ocenach oddziaływania na środowisko) (Iwińska, Troszyński2014).

Energy knowledge and decision making – polish case

In order to decide people need to get information – this is one of the first rule of consultation process (see also: "ladder of participation"). If people are asked questions they are willing to give answers so that they are treated as real decision makers. To present peoples' opinions, we present data from the public polls on the topic of opinions of energy sources which was based on direct interviews (face-to-face) computer-aided (CAPI) in 2015 and TNS OBOP survey in 2014. Both were based on a representative random sample of adult Polish residents (Poles over 15 years of age).

Before sharing the analysis, it is worth pointing the significant weakness in the study of opinions on energy issues. It has to do with the low level of knowledge of Poles about energy technologies and practical aspects of the energy system. For the government assessment or opinions on presidentials' candidates respondents refer to their common knowledge or their own emotions. However, in the case of assessment of the sources of energy, or preferences for certain types of installations issue it is more complicated, because the respondent refers to a little-known concepts such as energy efficiency, the cost of producing energy, the level of security and prospectivity source. Energy awareness by the polish society can be described by the data from the COBS survey poll (N=1005):

- 17.8% Poles are interested in the energy sector;
- 66.5% Poles do not track the energy issues;
- 75% believe that CO_2 emissions have a significant impact on the climate;
- 65% prefer renewable energy sources (RES) if not have to pay extra for it – sun (38%) and wind (22%), carbon (17%);
- Only 26% would be willing to vote for the political party with program focused on environmental protection (*Kierunki rozwoju energetyki w Polsce. Opinie o źródłach energii i ich wykorzystaniu* 2015).

Besides the little interest in the topic of energy, it can be stated that the subjects involve the future of the energy sector primarily with the development of renewable energy. In second place locates conventional energy, with a high rate to maintain investment at the current level. The low level of support received nuclear energy. Given the lack of nuclear power plants in Poland can be expression "keep unchanged" and "reduce" be treated as opinions, in fact, negative – 55% (15% answered "do not know").

Tab. 1. In your opinion we should increase/decrease the involvement in...

Investment type	INCREASE	Leave the SAME LEVEL	DECREASE	ABANDON
COAL-FIRED Power Plant Construction	23	45	17	6
Renewable Energy Installation	77	11	1	3
NUCLEAR Power Plant Construction	26	14	11	34

Source*: Kierunki rozwoju energetyki w Polsce. Opinie o źródłach energii i ich wykorzystaniu* 2015.

The test results clearly show that sympathies of respondents are focused around renewable energy and conventional energy. This is accompanied by a low level of public confidence in nuclear energy. Respondents opinions of the future direction of the Polish energy sector is a system of beliefs, associated both with social status, as well as with the shared values of respondents.

The presence of statistically significant correlation between the concept of development of the Polish energy sector and position in society and value system of respondents inclined to undertake further research in the sphere of social consciousness. Even if it seems that we are dealing with the process of the gradual development of the energy awareness of Polish society, the knowledge and interest level is low. This involves increasing knowledge elites significant impact on economic phenomena on the quality of life of the society. In addition to material living conditions are becoming increasingly important factors such as political security, military, environmental and energy.

There are several analysis concerning the lack of confidence in nuclear energy in Polish society (Maciejewska, Marszałek 2011; Wagner, Świątkiewicz-Mośny 2012; Ruszkowski 2015), however it is interesting to look into the details of demographic division on energy sources' supporters (Tab. 2).

Tab. 2. Do you think we should concentrate on development in Poland...

Renewable energy sources – 42% SUPPORTERS:	Both (RES and conventional energy) – 46% SUPPORTERS:
• Age 18-24	• Age 65 years and more
• Administrative Workers	• Secondary education
• People with leftist / centrist views	• Employees of services
	• Pensioners
	• Individuals with income per capita to 100 Euro
	• Individuals with right-wing views

Source*: Kierunki rozwoju energetyki w Polsce. Opinie o źródłach energii i ich wykorzystaniu* 2015.

According to these statistical data, those who support nuclear energy are usually:

- men,
- age 25-44,
- cities inhabitants,

- managers with higher education,
- technicians, engineers,
- those, who assess his/her financial situation well,
- do not participate in religious practices.

In everyday life citizens' activities related to the widely understood energy can be classified as energy consumption and/or production. With reference to the above analysis, we may distinguish micro, mezzo and macro types of the energy awareness. On this basis, it is possible to structure the energy behaviour of various individual and collective entities and to systematize different types of energy awareness.

Additionally, the analysis of survey polls after the negotiation during the protest action of mine sector trade unions (in March 2015) show that we deal with the "division" of two groups in Poland: those who take social security perspective (SS) as a priority and those who prioritize economic security perspective (ES). The statements representing SS perspective were based on the opinions on main postulates agreements (of Prime Minister)[1].

Tab. 3. Program of restructuring of coal mines – opinions

Social security perspective	Economic security perspective
• Villagers	• professionals
• Persons employed in the private sector	• directors, engineers
• Unskilled workers, farmers	• Age 30-34
• Age 50-54 years	• Higher education
• vocational education	• Earnings > 630 EU
• people with the lowest income household	• declare interest in politics

Source: authors own study, based on *Kierunki rozwoju energetyki w Polsce. Opinie o źródłach energii i ich wykorzystaniu* 2015.

The demographic characteristics of the two groups are presented below (Tab. 3). It is essential to distinguish between energy consumers and energy producers' awareness. In

[1] SS statements: (1) Signing of the agreement created an opportunity to return to social dialogue between government, unions and employers, (2) The signing of the agreement marked the beginning of a process of gradual adjustment of the mining industry to market requirements, while maintaining social peace. ES statements: (1) Signing of the agreement strengthened a demanding attitude of the miners, which means the need to further subsidize the mining industry by all taxpayers, (2) Signing of the agreement has launched a flurry of claims of different backgrounds to the government, which will lead to an escalation of social conflicts.

statistical terms, we assume that the producers include those working in the mining and energy sector. This sector includes 170 thousands people (*Statistical Yearbook of Industry 2014* 2015, p. 206). If we assume that the phenomenon of sharing some professional values concerns spouses of employees in these industries, we have already an environment of about 350 thousand people. This great division of peoples perspectives occur as one of the understandings of the problems in implementing environmental democratic procedures (participation of different stakeholders). The question arises whether these groups can influence decision makers, who is more influential, who can decide on what and how deliberative and participatory democracy works in real.

Decisions concerning energy: what do the citizens' energy decisions concern?

In case of nuclear energy there were conducted several public opinion polls and consultations in the municipalities of Pomerania, where the power plant siting in planned. The cooperation between PGE EJ 1, the biggest polish energy company, with municipalities of Choczewo, Gniewino and Krokowa includes: information and education activities (also study visits); sponsoring activities; creation of multimedia Local Information Points; support of municipal initiatives by the PGE "Energy from the Heart" Foundation; concluding agreements with local business companies (cf. http://www.pgeej1.pl).

In January 2015 mayors of these municipalities, concerned about the limited progress of the project, sent an open letter to the Prime Minister. They indicated approx. 5 year delay in the implementation of the investment, and noted that the lack of the decision regarding the power plant location blocks the sale of municipal land for that project. Since the beginning of the emergence of the concept of building a nuclear power plant, a strong lobbying of the interest groups associated with conventional energy has been noted.

In relation to the Renewable Energy Sources, the RES Act has been adopted by a majority of only two votes in Parliament. On January 16, 2015 the Parliament passed a law on renewable energy sources (RES). This Act provides for the development of civic energy production, through the adoption of the so-called prosumer amendment. It concerns the introduction of the first in Poland system of feed-in tariffs for the smallest producers of energy from RES. This amendment applies to micro-prosumers, exploiting the smallest micro installations of the 10 kW power. Thanks to this political

decision, the legal regulations have been created, allowing the development of technologically diverse distributed energy segment. According to experts' estimates, approx. 250 thousand. micro installations may arise by 2020 (cf. Newsletter No. 33/01 2015 Institute for Renewable Energy).

There has been a political game, which led to the rejection of the prosumer amendment by the Senate. This is an example of participatory process involving multiple stakeholders (including NGOs). There has been a very dynamic discussion during Senate committees, there was lobbying by supporters and opponents, positions of interest groups were published on the Internet, in the end the Deputy Minister of Economy – Witold Pietrewicz – submitted a proposal to reject the amendment and Senate committees have adopted this request.

With regard to the mining industry we can show the government's top-down procedure in the case of the Coal Company. This led to trade union protest action, then to negotiations with the Prime Minister and as a result the acceptance of the compromise solutions. Currently proceeded coal firm Jastrzębska Spółka Węglowa situation should be added, where lack of participatory solutions (termination of the collective labour agreement by the board) led to a multi-day strike and mediation involving ex-Deputy Prime Minister Longin Komołowski. As of today, underground strike has been finished. In 2015 the newly-elected government has declared changes in energy policy and the Energy Ministry announced that coal is still expected to remain important source in Poland.

As far as decision making processes are concerned in everyday life citizens have to deal with energy issues mainly in the context of fuel prices (drivers and small businesses) and paying bills for electricity, gas and hot water. Energy awareness at the macro level is usually articulated in crisis situations, such as, for example, in the conflict between the government and trade unions regarding the restructuring of the Coal Company. On meso-level there are decisions regarding the principles of local energy policy in the municipality, city, county, concerning, among others, priorities in the field of energy sources or local energy sources should be coal or biomass-operated. Decisions are made concerning the insulation of buildings, replacement of lighting in energy-saving, etc. Even if there are also options at micro level (see Tab. 4) the possibilities are not well known (for instance it is not common to change the energy supplier).

Tab. 4. Micro-macro levels of decisions in energy issues

Macro	**Opinions, moods and attitudes of citizens related to the energy policy of the state (protest as a real power).**
Meso	Decisions regarding the principles of local energy policy in the municipality, city, county, concerning, among others, priorities in the field of energy sources.
Micro	• The choice of the energy supplier. • The choice of energy sources for heating system in a single family home. • Adoption of the role of the prosumer, or micro energy producer in the household conditions.

Source: authors own study.

There must be stated that due to the international and national law (based on the Arhus Convention) citizens should be more involved in accessing information and consultation processes. As for now however it is restricted to very few options of decisions as well as few groups on different levels. There is low level of public knowledge and interest in the topic, which gives opportunity to tackle the issue around experts and business stakeholders.

Conclusions

The main goal of this article was to present the low level of interest and knowledge on energy issues in Poland. We presented some opinions and their correlations within demographic divisions between different groups on meso and macro level. We pointed out the role of the major stakeholders in this process. Lack of wide spread information and consulations processes supports the low level of energy awareness. The focus on individual entitlements at the macro (national) level is in deference to established state sovereign powers and citizenship rights, so the idea of broadening public participation may need additional forms of support. Nevertheless there is visible an "energy move" within analysis from social and citizens' perspective. The totality of phenomena accompanying this process is an extremely attractive object of study for further social scientist research.

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Abstract

This article tackles the idea of environmental and participatory democracy in Poland. Due to Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters known as the Aarhus Convention people should be involved in decisions concerning environment and energy issues in the country. All large investments, and those are certainly investments in energy infrastructure, are associated with a variety of interest groups and organizations. The main goal of this article is to show the decision making pro-

cesses do not come across the knowledge and public information on nuclear energy in Poland. We present the context and background for the structural model of energy decisions using and reinterpreting survey data from 2014 and 2015 from the opinion polls on various sources of energy in Poland. From this point of departure we distinguish the micro-, meso- and macro- level of energy decisions.

Key words: *democracy, energy sources, citizens' participation*

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