

Bełchatów 2030: Alternative Transformation Scenarios and Development

Paweł Ruszkowski*

Abstract

The article addresses the current social, economic and political conditions regarding the energy transition in Poland. The detailed analysis concerns the game of interests that is taking place around the transformation of the Bełchatów industrial and energy complex. On the one hand, a strong state concern (power plant and mine) with traditional technology (lignite) and traditional management style, employing about 10,000 workers (plus 3–4,000 workers in the immediate vicinity), enters the game. On the other hand – Bełchatów's business environment comprising several thousand small entrepreneurs and several hundred medium-sized companies operating in various production and service segments. Three scenarios for building the company's future formula are discussed: preservation of the status quo based on new open pits (Szczerców), use of the existing energy infrastructure in the RES sector, and launch of industrial investments (permanent jobs).

Keywords: Bełchatów, energy transition, electro-prosumerism, photovoltaics, RES, plant community, conventional energy, labor market, electromobility.

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* Collegium Civitas, pawel.ruszkowski@civitas.edu.pl; ORCID 0000-0001-5015-71-78.

Power Industry in the Face of Transformational Pressures

The war in Ukraine and the related process of European countries opting out of importing energy resources from Russia are creating new challenges for Poland's energy system. However, this does not mean that the energy transition awaiting the Polish economy will be easier to manage. It would seem that the lack of coal is a good argument for faster implementation of RES investments. However, all indications are that interest groups associated with conventional power generation will bet on the continued operation of coal-fired power plants, supported by imports (e.g. from Australia).

The problem of financing the National Reconstruction Plan and other funds dedicated directly to the energy sector, such as the Fair Transition Fund, has also not been resolved. Currently, Poland has not met the specific requirements set by the European Commission ('milestones'), which calls into question our participation in the €1.8 trillion pandemic emergency programs.

The energy crisis, resulting from state policies favoring the development of conventional energy sources and inhibiting the development of renewable energy sources, has been going on in Poland for many years. As a result of the implementation of vertical consolidation of electric power companies, a monopolistic organizational and ownership structure of the electric power industry was created, subject to bureaucratic control by the political center (government). The investment policy in the electricity sector, implemented by the state-owned power companies, strengthened the position of the coal power industry, resulting in a lower level of technical/technological innovation in the entire sector and an increase in the risk of stranded costs.

In late January 2021, the government adopted the 'Energy Policy of Poland until 2040'. It is estimated that in 2021–2040, the scale of investment in the energy sector may reach PLN 1,600 billion. By 2030, PLN 260 billion of EU and domestic funds will be directed to the national energy and climate transformation [*Polityka Energetyczna Polski... 2021*: 3–4].

In a strategic sense, this is another attempt to find a compromise between the requirements of the Green Deal and the expectations of social circles associated with conventional energy. The government declares that the share of coal in the energy mix will be reduced to 11% in 2040, at the same time indicating that in 2030 the share of coal in electricity generation will be 56%, while the share of Renewable energy sources

(RES) will be 23%. Such an energy transformation plan may save the government from a visit by ten thousand miners to the center of Warsaw, but it can hardly expect applause from the European Commission.

An important and at the same time highly controversial element of the government's strategy is the concept of replacing coal power with nuclear power plants and offshore wind power. Gas sources are to be a supplementary factor in the energy balance during the transition period. There are doubts about the capital-intensive and time-consuming investment in nuclear power, as well as the desire for state-owned energy companies to dominate RES-related markets.

Opinions are circulating in decision-making groups, indicating a desire to maximize the involvement of EU funds in the process of implementing projects submitted by state-owned energy companies. In principle, it is assumed that all of these funds should be involved in investments by state-owned energy concerns. Projects promoting the development of electroprosumerism, local and regional distributed energy systems are treated as business-competitive. Bureaucratic mechanisms, which play an important role in the preparation and evaluation of these projects, will favor the projects of energy corporations, especially since they will be investments with high financial potential.

A new tool is being introduced into the game for the future of the energy system, which will allow energy companies to move seamlessly to the 'green side of power'. The solution adopted by the government, involving the spin-off of carbon assets to the National Energy Security Agency (NESA), gives business advantages to large state-owned energy companies. They will not bear the costs of restructuring coal-fired power plants. They will allocate all of their investment funds to RES development. In practice, this means that all state-owned coal-fired power plants will be under one State Treasury company, which will also assume the debt of coal assets. That is, the cost of the entire 'business' operation will be borne by all of us, as taxpayers.

The second aspect of the creation of NESA is the social cost of the entire operation. The government is absolving the boards of directors of energy companies of their ethical and social responsibility to their work crews and their local environment. The concept of the so-called evolutionary exit of the Polish energy industry from coal, without launching regional industrial investments, is in fact a formula for the gradual extinction of professional and social life in Bełchatów, Bogatynia, Koźienice and Zawada near Połaniec, among others.

Until now, the main factor in the persistence of state-owned energy companies has been the willingness of Poles to foot the bill for their technological, organizational and managerial backwardness. This state of false social consciousness is gradually

becoming a thing of the past. In the case of young Poles, there is a generational climate revolt. Soon, the wider public will recognize the fact that they are bearing the costs of the dominant position of state energy in the Polish economy against their will. Eventually, however, rising electricity prices will trigger mechanisms of social discontent and public resistance. There are many indications that this change in awareness will take place before the next parliamentary elections, scheduled for autumn 2023.

Bełchatów – a Continuation Strategy

The strategic dilemmas that are not resolved by Poland's Energy Policy [PEP 2040] can be traced to the example of the mining-energy complex Bełchatów, where Minister Piotr Naimski promises to locate a nuclear power plant, the coal lobby seeks to continue the conventional profile by launching a new opencast mining site in Złoczew, while experts from environmental organizations propose to enter the green investment stream.

Bełchatów can be seen as an example of a model conflict of interests that will play out on a macro scale. On the one hand, a strong state concern with traditional technology and management style, employing about 10,000 workers (plus 3–4,000 in the immediate vicinity) enters the game. On the other hand – Bełchatów's business environment consists of several thousand small entrepreneurs and several hundred medium-sized companies, operating in various production and service segments.

The main idea to maintain electricity production at the Bełchatów Power Plant is to build an opencast lignite mine in Złoczew, 50 km away. The biggest weakness of this concept is the high cost of the investment – about PLN 15 billion. An additional cost is the construction of a railroad to transport the coal for about PLN 900 million. According to experts, obtaining financing for this project is unlikely. Michał Wilczyński [2019] points out the following threats to the viability of this project: the lignite seams lie 354 meters below the surface; their exploitation requires the use of explosives; the surrounding areas will have a very serious problem with access to water; the construction of the open-pit mining requires the displacement of 3,000 residents from 33 villages.

According to an expert report by Benedykt Pelpliński [2020] the 450 million tons of coal in the Złoczew deposit is worth between 33.8 and 45.1 billion zlotys, which means that the profitability of burning the mined coal in power plants should be

more than 7.7%–10.3%, if only the formal area of the depression funnel is taken into account. In the most realistic scenario of external costs, the profitability of burning mined coal in power plants should be 29.8%–39.7%. Meanwhile, between 2009 and 2017, the average profitability obtained by PGE (Polish Energy Group) was 10.5%.

The District (Powiat) Council's analysis shows that the depletion of lignite deposits will result in a gradual decline in employment, even if the Złoczew open-pit is launched. In recent years, about 40 million tons of lignite coal have been mined annually at the Bełchatów KWB (Bełchatów Power Plant). Although the resources of the Szczerców lignite opencast are 650 million tons, it is expected that the main stream of collected overburden from the Szczerców opencast will be exhausted by 2028 at the latest. This will result in the decommissioning of most of the overburden strings and the associated reduction in employment. In this context, the level of employment in the Bełchatów mining and energy complex is expected to decrease by about 500 people per year over the next 2–3 years, with the accumulation of this process in the 2028–2032 perspective. In practice, this means that the 1,500 jobs obtained in Złoczew in the optimal scenario do not guarantee the survival of the plant community in its current form.

The analysis carried out clearly indicates that the main element of investment risk, in the case of the 'Złoczew' open-pit, is the low probability of return of the invested capital. In practice, this excludes the real possibility of raising funds to finance this project.

In my opinion, both the workers and the trade unionists representing their interests should include in their rescue plan the argument that the Złoczew open-pit is a project with a high economic and political risk factor. Sticking to the 'continuation strategy', means treating the Bełchatów industrial complex as a central resource for conventional energy. The collapse of this direction of energy investment may, in the case of Bełchatów, result in the PGR (State Agricultural Farm) effect of the 1990s. Once again, it will turn out that the games played by coal interest groups are closer to the aspirations of the political elite than the interests of lignite energy. In the context of the above conditions, I believe that a responsible strategy for the survival of the Bełchatów power complex as an employer must assume alternative scenarios.

Bełchatów – Capital Conversion Strategy

Note that in the post-pandemic economy, the competitive struggle to raise investment capital will be much fiercer than in the past five years. There will be a great variation in the situation of industries and regions. In this game, which has already begun, the resources of various types of capital held by different communities will play an important role. This is primarily about the resources of human, social, financial and political capital. In a crisis situation, when resources are always scarce, it is worth thinking about the pooling of capitals and their conversion, about building a strategy for the survival of Bełchatów as a local community, in which the power plant and the mine are important, but not the only social environment that counts.

In assessing Bełchatów's social potential, the clear trend of shrinking population cannot be ignored. In 1975 Bełchatów had a population of about 10,000. The peak of the population influx was in 2002, when Bełchatów was home to about 63 thousand people. For several years, the city has been losing its attractiveness: in 2017, the number of residents fell to about 58 thousand (District Council data).

In my opinion, it is necessary to create multi-variant scenarios for the future of Bełchatów, instead of concentrating forces and resources on one big project. I realize that, based on years of experience, union leaders believe in their causal powers. It is clear that no decision-maker will tell them: 'we are liquidating the Bełchatów Power Plant'. Rather, the decision-makers will say: 'dear trade unionists, trust us ...'.

The resources that Bełchatów has at its disposal as a local community can become a premise for building effective scenarios for the future, provided that the energy community is integrated with the business community. The city is located in the middle of Poland, with good transport links to other regions. Bełchatów's strengths lie in its human resources: the management staff at the power plant and mine are several hundred highly qualified managers; a significant group of power engineers have high professional qualifications, with relevant licenses and certificates. On the business side, we note the presence in the local market of several hundred small and medium-sized companies, including dozens of well-established and reputable companies in the market.

The crisis of the conventional energy industry, coupled with pandemic stunted economic growth, can be seen as an opportunity to rebuild the local system of interests. This requires a bold decision regarding the transition from a coal power

culture to one based on renewable energy. It is possible to identify a number of projects in this area that have a chance of receiving EU funding.

The starting point for the construction of a new business formula for Bełchatów is the technical infrastructure resources, in particular the electric power industry. Of key importance are two large power transmission substations, which allow the implementation of connection projects for RES installations, on a regional scale. As is well known, connectivity is one of the main barriers to RES development in the Polish power system. Based on existing infrastructural facilities, it is possible to build competitive photovoltaic and wind farms, taking advantage of low connection costs.

Human capital resources, including power engineers and power managers, should be used to create service and production companies related to photovoltaics and wind farm operations. The combination of existing human and infrastructure resources opens up new investment opportunities, in the form of hybrid generation (wind farms + PV power plants + energy storage). This direction of business development allows expanding the field of activity to include the production of windmill components, solar panels and batteries for energy storage.

In all these ventures, investors can be private business, cooperating with local government units and with employee companies formed by employees and staff of power plants and mines.

Current analyses of development trends in the renewable energy segment indicate high dynamics in photovoltaic production and services. Estimates by the Institute of Renewable Energy (IEO) [Gręda, Kania, Skomorowska, Wiśniewski 2020] show that in 2019 nearly 6,000 people were employed in all PV sectors, while by 2025 nearly 16,000 people may find employment in photovoltaics in all industries.

In creating competitive scenarios for Bełchatów's transformation, it is worth bearing in mind that the European Commission sees green energy as an important component of Europe's anti-crisis measures. The pandemic situation has made European governments realize that in order to maintain technological independence and security of supply (including energy security), it is necessary to produce in the EU not only photovoltaic modules, but also intermediates (so-called wafers) and cells used in PV modules.

The concept of launching the production of wafers, cells and modules in Poland (the so-called GigaFactory) is already under way (Katowice). It is also advisable to include Polish investments in the broader framework of EU policy, as a so-called Project of Common Interest (PCI). Adopting such a solution will provide these investments with additional support in terms of building a competitive advantage in the market [Wiśniewski, Michałowska-Knap 2020].

The second strand of green energy projects is a whole range of products and services offered to prosumers. A prerequisite for the implementation of this project is the popularization of the idea of prosumerism in the wider community of residents. The aim of the project is to build a local system of electricity generation and distribution based on RES. The process of creating this system and handling its operation in the future – is another job. It is worth emphasizing the additional systemic value of this project: electropower can become a platform for practical cooperation between business, local authorities and residents. Various forms of cooperation in meeting the energy needs of residents can begin the process of building a new type of local community.

Another scenario for Bełchatów's transformation refers to the government's priority idea of electromobility. It is worth considering a project to manufacture components for electric cars in Bełchatów. Depending on the scale of the investment, several hundred new jobs could be created here. However, one should be aware that the game of obtaining these jobs has been going on for some time. It seems, however, that the political capital that unions still have at their disposal may play an important role in this context.

The third scenario introduces an element of diversification of business offerings, through the creation of a manufacturing, medium-sized company, e.g. in the electrical and electronics industry (electrical machinery, electric motors, transformers, batteries). A mixed ownership project, combining private and local government capital, can be considered here. The argument for locating this type of investment in Bełchatów is the supply of highly skilled labor.

The Crew of the Bełchatów Power Plant as a Community

For the construction of a strategy for the future of Bełchatów, it is important to define precisely the type of social capital that makes us talk about the crews of a power plant or mine as integrated social communities with a certain political power, capable of influencing the institutional environment. Social capital is understood here as a type of bond that unites wage earners into a plant community that has its own leaders, a set of norms that regulate their interactions, and a system of shared values. The characterization of the plant community of the Bełchatów Power Plant presented below is based on the results of a study of industrial environments [Ruszkowski ed. 2010], [6] conducted in 2007–2009 at the following companies:

Kopalnia Węgla Brunatnego Turów S.A.; Elektrownia Turów S.A.; Elektrownia Opole S.A.; Elektrownia Bełchatów S.A.; Enion S.A. Currently, the first four companies are part of the PGE S.A. energy conglomerate.

The key category that defines the daily reality of the plant community, internal relations and relations with the external environment, is the concept of 'community'. A community in the minds of employees is a particular type of social system, i.e. a whole composed of several parts: from the basic collectivity, i.e. the employees of a given enterprise (company); the company itself as a certain legal and economic entity; and the collectivity of employees' families, indirectly, i.e. through the employees concerned, included in the circle of the community.

The labor relationship, i.e. being an employee of the company, is a condition for participation in the community. The labor process has a certain material significance, as a condition for the existence of the worker and his family. However, from a community perspective, work is primarily symbolic: it is a practical expression of participation in the community, the fulfillment of a moral obligation to the community. The close relationship between community and work, and the symbolic meaning of doing work and being a worker, is key to understanding the situation of public sector working classes, especially under conditions of profound structural change. The relationship between workers and the employer or owner is defined by the principle of sharing the good within the community. The profit of a company is a combination of the work of the rank-and-file worker, the organizational efforts of the manager and the productivity of capital. Respect for the principle of sharing the good is a criterion for evaluating the employer/owner: either he is considered part of the community or an expression of external forces and interests.

The integration function of the community is primarily concerned with aligning interests and avoiding conflicts. Thanks to these two processes in the community, there is a sense of closeness in people's interactions. Daily life and work are intertwined, which gives a sense of security that also comes from moving in a familiar social environment. The second aspect of integration, is treating the factory community as part of a broader community, rooted locally, including family and neighborhood ties. It is therefore a special type of community that encompasses almost all manifestations of the life activities of its members.

Trade unions play a role in the community as guarantors of internal order. The activity of unions stabilizes labor relations, among other things, by limiting the possibility of changing working conditions and wages. The social contract is an element of the community order, which is treated as an order superior to the administrative or market order.

A strong integrating factor of the community is the predominance in the consciousness of the respondents of collectivist type values over individualist values. An example of this type of orientation is the negative perception of the phenomenon of rivalry between managers, which is treated as a manifestation of careerism and the so-called 'rat race': attitudes of this kind are evaluated negatively, as causing conflicts and thus violating the community order.

It is worth considering to what extent the presented regularities, based on research from several years ago, correspond to the current picture of the plant communities of Power Plants and Mines. Over the past decade, many factors shaping the situation of these communities have changed. First of all, the companies lost their legal personality and were incorporated into PGE's organizational and ownership structure. This weakened the political position of trade unions, which lost direct contact with the employer. The decision-making power of executives was significantly reduced. A number of subsidiaries have also been created, whose relationship with the company community is rather loose.

My expert knowledge, resulting from informal contacts with the labor community, allows me to believe that the indicated processes have not significantly affected the functioning of social mechanisms within the plant community. The formal incorporation of power plants and mines into the hierarchical structure of the corporation has not weakened community ties. In the consciousness of employees, the headquarters is treated as a distant, unknown and difficult to understand world.

It is clear that functioning within such a community satisfies the workers' need for security. Information about the threat to the economic basis of this social system is not accepted. The local perspective can become an element that integrates different types of interests, especially since the game for the shape of the Polish energy sector is still being played at the level of state institutions. In the professional community of power engineers in Bełchatów, the conviction 'we can do it' is still strong. At the same time, however, many among younger professionals and managers are beginning to analyze alternative career scenarios.

To the same extent, Bełchatów, as well as the entire Polish economy, is facing fundamental challenges of a systemic nature. However, there is no consensus on a strategy to successfully implement the energy transition. Evolutionary solutions that attempt to preserve the status quo risk moving Poland into the realm of peripheral countries. In this context, it is worth quoting a prescription for energy transformation, formulated by Anthony Giddens [2010]: 'We need to create a future in which renewable energy sources will meet most of the demand. This will undoubtedly be a profound change, with complex economic and social consequences. Work with

other countries, regions or cities intensively and steadily, spreading your own actions as widely as possible on a global scale. Add a bit of utopian thinking to politics. Why? Because no matter what happens, we will strive for a form of society that will eventually turn out to be completely different from the one we currently live in. We have to take risks to achieve our goals'.

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