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RESTRUCTURING CONDITIONS FOR TRADITIONAL INDUSTRY ENTERPRISES IN POLAND

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Abstract: The primary objective of the article is to identify conditions of restructuring from the point of view of Polish enterprises operating in the traditional industry, black coal mining, iron and steel metallurgy and the power industry. They are strongly connected with one another and play a strategic role in the economy of the country.

Keywords: enterprise restructuring conditions, traditional industry, black coal mining, iron and steel metallurgy, power industry.

1. Introduction

In European economies, the mining, power and metallurgy industries are defined as heavy-duty, traditional industries (Jezierski, Leszczyńska, 2003; Midor, 2015; Jonek-Kowalska, 2017). They are classified this way due to producing large volumes of raw materials, a low degree of processing and its further production purpose. Black coal mining, iron and steel metallurgy and the power industry are treated in Poland as matured industries with a declining character, due to the fact of generating CO2 pollution, harmful to the natural environment, as well as to the life and health of people. Nevertheless, they are still the key strategies for the economy of the entire country, and for this purpose, they are subjected to further restructuring.

R. Borowiecki speaks about restructuring as a system of modification or innovation, as well as modernising the organisational structure, namely changes that have a complex, multi-dimensional and long-term character (Borowiecki 2007). Besides the above, such changes should be innovative, not only in the area of the product, structure or process, but also management. They should be characterised by the ability to adjust to changes, building and retaining a lasting competitive advantage and the flexibility of functioning. Enterprise restructuring depends on external conditions related to the variability of the surroundings that determine their development-related possibilities, as well as internal conditions correlated with

improper management. Due to the above, any adjustment activities of enterprises should be based on knowledge of success and the risk factors of their functioning.

The article was prepared on the basis of literature research and analysis of conditions of enterprise functioning in Poland. It is of a theoretical and review character. Statistical materials of the Polish Agency for Enterprise Development and Institute of Managing Mineral Resources of the Polish Academy of Science contained in the Black Coal Mining Report in Poland 2017 were used in the article.

In order to carry out the tasks undertaken in the article, the black coal mining industry, iron and steel industry and power industry were characterised, and a comparative analysis was conducted for the past and future conditions of their restructuring.

2. Characteristics of the black coal mining industry

Black coal mining has been subject to restructuring since 1989, from transformation of the system and switch to a market economy, introducing several new restructuring programmes aimed at adjusting to the principles of market activity and increased competitiveness on a global scale. This mainly consisted of reducing the debt of the sector and retaining financial liquidity, as well as limiting ineffective production capacities by liquidating non-profitable regions, fields, extraction levels or entire mines, as well as a reduction in employment. Consequently, this resulted in simplifying the spatial structure of the underground infrastructure of mines and reducing the costs of maintaining mining pits, as well as reducing the number of active walls and concentration of extraction and the increase of capacity obtained thanks to modernising mining equipment by adding new machines and devices (Kicki et al., 2018). When analysing many years in the past, it may be stated that restructuring did not bring about the anticipated effects. This may have done its job in the technical and technological aspect, as well as socially (reducing employment), but it did not have a real impact on increasing the competitiveness of the Polish black coal mining industry on global markets.

In 1990, there were 70 mines in the country (three under construction), which employed 388 thousand people achieving an extraction of 151.3 million tonnes of coal. In 2016, extraction at the level of 70.4 million tonnes was achieved in 34 mines, with the employment of 84,645 people. Similarly, a declining tendency of national black coal extraction[1] was recorded in 2017, when it reached a level of 65.8 million tonnes, and in 2018, amounting to 63.384 million tonnes[2].

[1] Domestic production of black coal is subject to systematic reduction. In 2007-2017, it was reduced by 25% as a result of reduction of extraction of power coal by 28%. Black Coal Mining Report in Poland 2017, Kraków 2018, p. 91.

[2] Per the data of the Polish Agency for Enterprise Development in Katowice, https://polskirynekwegla.pl/raport-dynamiczny/wydobycie-i-sprzedaz-wegla-kamiennego-ogolem [accessed on 14 March 2019].

Black coal mines in Poland are some of the deepest in the world. Nine of these extract coal at a depth below 1,000 metres. In the Budryk Mine, belonging to Jastrzębska Spółka Węglowa S.A., a level at a depth of 1,290 m is under construction. Reaching lower and lower parts when extracting coal requires a high level of knowledge and measures ensuring the safety of the miners. An increased depth of extraction also causes an increase in the level of nearly all natural disasters, such as: methane explosion, rock burst, eruption of gasses and rocks, as well as climate-related hazards.

The general image of national black coal mining is continuously transforming. Nevertheless, despite introducing numerous changes, mining in 2013-2017 generated negative financial results. This resulted mainly from the reduced prices of coal on global markets[3]. The difficult situation of this industry in 2015-2017 and the requirement for fulfilling on-going liabilities cased a significant reduction of replacement expenditures into new deposits. Consequently, this made it impossible to carry out extraction plans in subsequent years and a consumption of higher profits at the point of coal prices raising in the middle of 2017. After the recession, as a result of restructuring and an increase in prices on the market, the industry recorded a profit of net sales at a level of 14.3% in 2017 in total.[4] Insufficiencies of domestic coal were supplemented by the import of power coal, mainly from Russia and Colombia, and coking coal from Australia. In 2017, import of black coal amounted to 13.3 million tonnes, while in 2018, it was nearly 20 million tonnes.

The Polish economy is the most dependent upon coal among countries in Europe. The total share of black and brown coal in production of power is at a level of 77%. Whereas, in the largest economy in Europe, i.e. Germany, this share amounts to 37%, while in the UK, it only amounts to 7%.

Figure 1 shows the data for 2017, with the percentage share of coal in the total energy balance for particular European economies.

[3] The price of black coal in Poland is shaped by the macroeconomic situation in the world, including, primarily, Asian markets. When determining prices, the quality parameters are also taken into account.
[4] Black Coal Mining Report in Poland 2017, Kraków 2018.

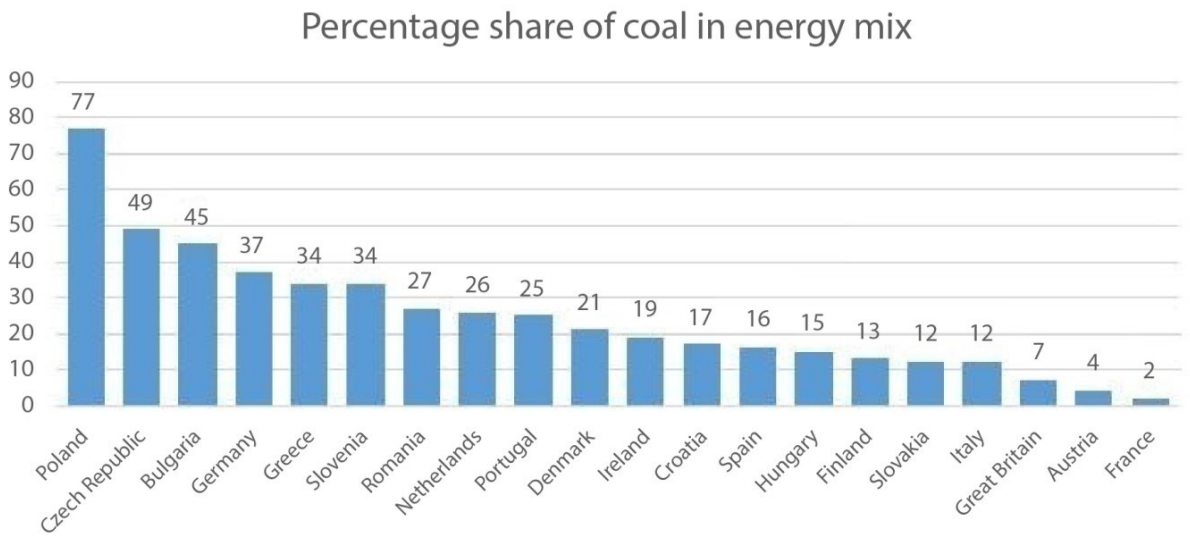

Figure 1. Share of coal in the energy mix in Europe. Source: www.wysokienapiecie based on: www.agora-energiewende.de, https://forsal.pl/artykuly/1359800,kolejne-rzady-skreslaja-wegiel-co-proponuja-w-zamian.html [accessed on 5 December 2017].

The situation of Poland facing decarbonisation of the European Union and the accepted obligations of reducing CO2 emissions seems to be very difficult and complicated. Resigning from black coal completely, due to its strategic importance for ensuring energy safety and social conditions, seems to be impossible. Nevertheless, the industry must be transformed in order to adjust to the variable surroundings.

It is planned to introduce information technology and automation processes in mines on a broad scale. Works are also underway on improving the technology of exploiting deposits (Głodzik, Jasiewicz et al., 2010).

Restructuring black coal mining covers internal and external conditions in the following aspects: economic, mining and geological, political, legal, market, social, technical and technological and ownership. Black coal mining restructuring conditions, along with conditions of restructuring the iron and steel industry and the power industry, in order to compare them, are presented in Table 1.

3. Characteristics of the iron and steel industry

The **steel sector**, similarly to black coal mining, has been a permanent component of the Polish economy. Restructuring of metallurgy in Poland carried a political context. At the beginning of the 1990s, plants faced the necessity of adjusting their operations to market economy conditions. For many of them, transformation meant accepting challenges that exceeded their adaptation possibilities and market potential. Plants were no longer able to retain their competitive position on the domestic and European markets (Gajdzik 2018). Restructuring

the steel industry (Table 1 presents the restructuring conditions of the steel industry in Poland) covered internal and external conditions in the following aspects: economic, political, legal, market, social, technical and technological and ownership.

Restructuring of both the metallurgy industry and the mining industry took place on the basis of adopted programmes.[5] The permissible level of public aid intended for liquidation of excessive production capacities was defined by the European Commission. This could not exceed the amount of PLN 3.4 billion. As a result, approximately 1.2 million tonnes in production capacity were liquidated for ready goods (Kardas, Szulc, 2010), as well as open hearth furnaces and raw materials departments. In 2003–2007, the value of investments amounted to approximately PLN 3 billion. Restructuring of employment in 1999-2003 (at the initial stage) covered the system of employee protections. This resulted from the adopted Metallurgy Social Package. Then, in 2004-2006 (second stage), instruments of professional activation were implemented on the basis of the Metallurgy Activation Package. As a result of such processes, employment dropped in 1999-2006 by approximately 43 thousand people (Kardas, Szulc, 2010). Currently, the entire metallurgy industry, along with industries similar to metallurgy, generates the employment of approximately 146 thousand people (Gajdzik, 2016). Furthermore, an increase in work capacity has been recorded, from approximately 100 tonnes of steel per year per 1 employee to approximately 450 tonnes per year. The forecasts regarding the increase of work capacity in metallurgy indicate a level of 570 tonnes of steel per year, with employment at a level of 15.6 thousand people (Gajdzik, 2018).

Production of steel on a global scale, according to data from January 2017 shared by the World Steel Association, was at a level of 136.5 million tonnes, constituting an increase of 6% as compared to the same period in 2016. This is mainly composed of an increase of production in the Asian markets and in Eastern European markets in such countries as: China, Russia, Turkey, Ukraine. In Poland, an increase was also recorded due to increasing the production capacity at ArcelorMittal Poland. Production of steel in the European Union is still below average. Detailed data regarding the production of particular countries shows that in January 2017, 67.2 million tonnes were produced in China, which constitutes an increase of 7.4%; Japan produced 9 million tonnes of raw material, which constitutes an increase of 2.7%; while India produced 8.4 tonnes, which is 12% more when compared to the beginning of 2016. In the same period, the USA recorded a production of 6.9 million tonnes of raw steel, which constitutes a 6.5% increase. Poland, with production at a level of 835 thousand tonnes, recorded an increase of 17.8%, while Hungary, to compare, increased production of steel by 78%. Figure 2 shows the global production of steel in January 2017 compared to January 2016.

[5] There were several restructuring programmes adopted. The most important ones are as follows: "Restructuring programme for the iron and steel metallurgy industry in Poland" from 1998; "Restructuring and development of iron and steel metallurgy in Poland until 2006" from 2003 and Protocol No. 8 to the Accession Treaty. The European Commission studied the results of the completed restructuring process and approved them on 31 December 2006.

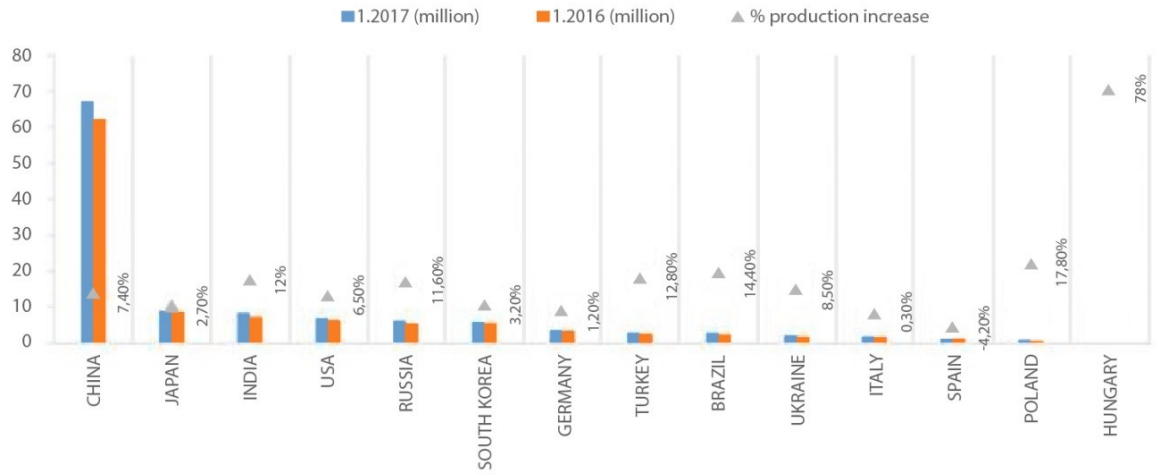

Figure 2. Production of steel in the world in January 2017 compared to January 2016. Source: https://polskiprzemysl.com.pl/stal-metale-i-metalurgia/rynek-stali-w-polsce/, https://www.worldsteel.org/.

Only one third of steel (mainly imported from China) and metallurgy products (import from European countries, such as: Germany, Ukraine, Belarus and Russia) and thick sheets (import from Ukraine) used in Poland was obtained from domestic production. Import constitutes two thirds (Siroń 2016).

The actual size of production of steel in Poland in 2016 was 8.9 million tonnes, while utilisation of the production capacity was 68%. In 2017, production increased by 14.8% to 10.3 million tonnes, which ranked Poland 18 in the world. In 2018, according to estimates, this number was 12 million tonnes, while plants could produce approximately 15 million tonnes of steel. Low use of production capacity is a problem throughout Europe and globally[6]. Europe limits steel production. Despite the above, it is worth recording the fact that the dynamics of production growth in Poland is the largest in the EU[7].

Currently, the metallurgy industry in Poland does not utilise its full production capacity. When compared to black coal mining, most of the plants are owned by international enterprises. Resigning from the technology of melting steel in open hearth furnaces and investments in innovative process lines and computer systems supporting management processes have completely changed its image (Rola, 2004). Current steel production fully meets the standards of global production. The technical and technological progress, strict ecological requirements and improvement of the sales infrastructure, including its change from a production-oriented to a market-oriented structure, have led to huge changes in Polish metallurgy, as well as to the increased competitiveness on the market. Both the mining and metallurgy industries play a strategic role in the country's economy (Gajdzik, 2018). This is incorporated into the

[6] According to the World Steel Association, the index of utilising production capacity of raw steel from 67 countries in 2017 was at a level of 68.5%. B. Gajdzik, *Forecasting changes of steel production size in Poland by means of the Force-Field method.* http://www.ptzp.org.pl/files/konferencje/kzz/artyk_pdf_2018/T2/2018_t2_596.pdf [accessed on 30 January 2019].

[7] http://www.nowastal.com.pl/332/produkcja-stali-w-2017-r-wzrosla-o-53-proc [accessed on 15 March 2019].

functioning of local communities, while providing employment and supporting the budget of the country, cities and communes through taxes. This combination, at a local, regional and global level, impacts their competitiveness.

Iron and steel metallurgy restructuring conditions are grouped together with conditions applying to black coal mining and the power industry, as presented in Table 1.

4. Characteristics of the power industry

The **power sector** is the key value in the case of each social unit. It is considered one of the most important divisions of economy, covering processes related to acquiring and using electrical energy and heat. Dominated by large, state-owned corporations and energy groups, it is currently undergoing serious systemic and structural changes, as it is falling behind economic, social and technological changes.

Currently, 60% of energy production capacity is generated by equipment that is over 30 years old and achieves a performance at a level of 32-36%, whereas new plants can achieve performance approximately 25% higher (Kleiber, Steinhoff, 2015). Lack of the required restoration investments regarding the technical and technological aspect has lead to dramatic degradation of such infrastructure. This has made the disproportions between the dominant state-owned and private sectors larger. This partial privatisation is the key factor in restructuring power enterprises.

The entire infrastructure of production, distribution, transfer, use and storage of electrical energy, i.e. on-going supply of power in Poland, is defined by the name of the National Power System (Polish abbreviation: KSE). The system is composed of separate business entities subject to supervision of different institutions and regulations.[8]

The KSE is composed of the following:

- production sub-system, constituting all sources generating electrical energy,
- transfer grid composed of HV lines (200 and 400 kV) and HV power stations,
- distribution network – supplying electric energy to recipients through 110 kV (or lower) power lines, as well as HV and MV power stations.

Figure 3 presents the structure of the power industry in Poland.

[8] Polish Association of Transfer and Distribution of Electrical Energy, Poznań, http://www.ptpiree.pl/energetyka-w-polsce/struktura-energetyki-w-polsce [accessed on 27 January 2019].

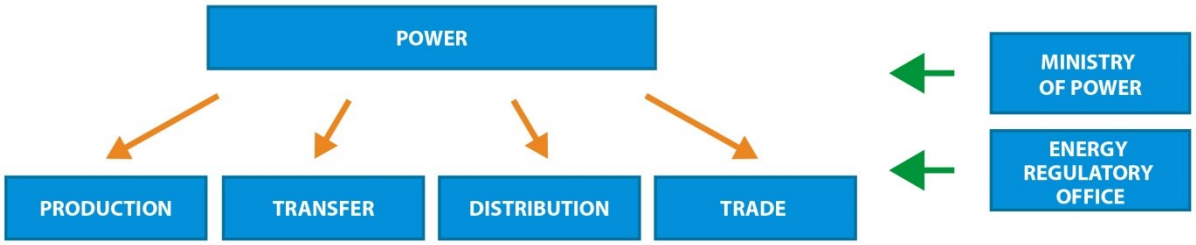

Figure 3. Structure of the power industry in Poland. Source: http://www.ptpiree.pl/energetyka-w-polsce/struktura-energetyki-w-polsce [accessed on 27 January 2019].

Distribution companies are in charge of selling energy. They buy it from producers and sell it to recipients. The Ministry of Energy supervises the entire power industry, while the Energy Regulatory Office approves energy prices in certain price plans.

Despite the fact that the economic future of the Polish power sector results in different opinions regarding the policy of decarbonisation of the EU, this situation should be stabilised due to the government's plans of approving the power policy of the country covering the period until 2040[9]. Currently, the national economy uses approximately 170 TWh of electrical energy, while import and export of energy has a regulatory character. The power installed at the National Power System exceeds 41 GW, of which over 30 GW is consumed by professional power plants based mainly on black coal and brown coal, which constitutes over 81% of the entire energy production. On the other hand, renewable sources constitute only just over 15% of installed power at present, and these are responsible for just over 7% of electrical energy production (Szczerbowski, Ceran, 2017). Furthermore, in the entire energy balance, 3.6% of energy is produced from gas, 6.2% are industrial sources, while 1.5% are water sources.

Figure 4 shows the structure of electrical energy production sources in the country.

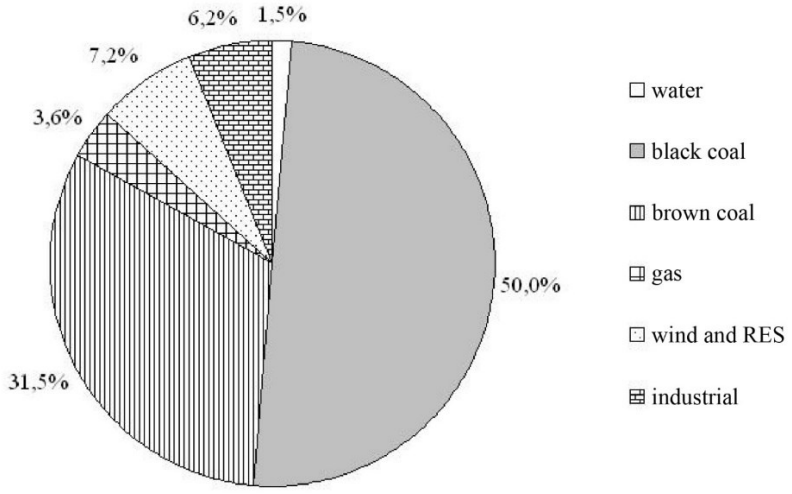

Figure 4. Structure of electrical energy production sources in the country, data as of 31 December 2016. Source: R. Szczerbowski, B. Ceran, Energy Policy of Poland in the Aspect of Challenges of the 21st Century, Energy Policy – ENERGY POLICY JOURNAL 2017, Vol. 20, Book 3, p. 19.

[9] Energy Policy of Poland until 2040 (PEP 2040), Ministry of Energy, Warsaw, PEP 2040_projekt_v12_2018-11-23.pdf [accessed on 18 January 2019].

From around the 1950s until now, production of electrical energy in Poland increased by over 17 fold. The actual appearance of electrical energy production in Poland from 1920-2018, through several forecasts in the 1970s, 1980s and 1990s, which were not fulfilled, as well as the current forecasts of the Ministry of Energy, regarding the increase of energy production by 2040, is presented in Figure 5. The anticipated demand for electrical energy in 2040 is 230-240 TWh.

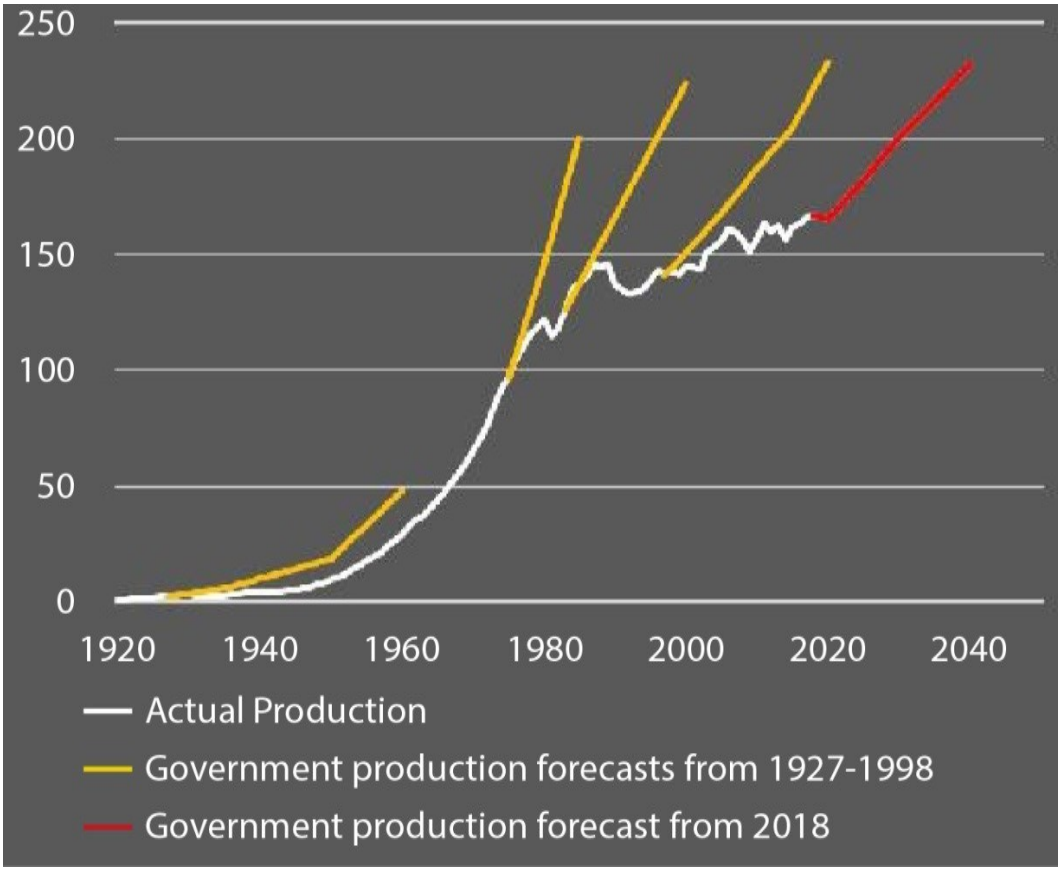

Figure 5. Production of electrical energy along with government forecasts of its increase [TWh]. Source: Project PEP40, government forecasts from 1927-1998, PSE, ARE, November 2018, https://wysokienapiecie.pl/15804-subiektywne-podsumowanie-2018-roku/.

Despite the demand, continuously increasing, pro-effectiveness activities and technological progress are the reason why the pace of increase in demand is slower than the increase in the number of devices used by society and the entire economy.

Restructuring the power sector, its generation or execution system (i.e. the basic activity, production of electrical energy and heat) should take place by changing the production structure, modernising transfer and distribution grids, developing new production units and works on implementing projects related to nuclear power and renewable energy sources. Figure 6 presents the forecasts of changing electrical energy production sources in Poland from 2020, in 5-year stages, until 2040.

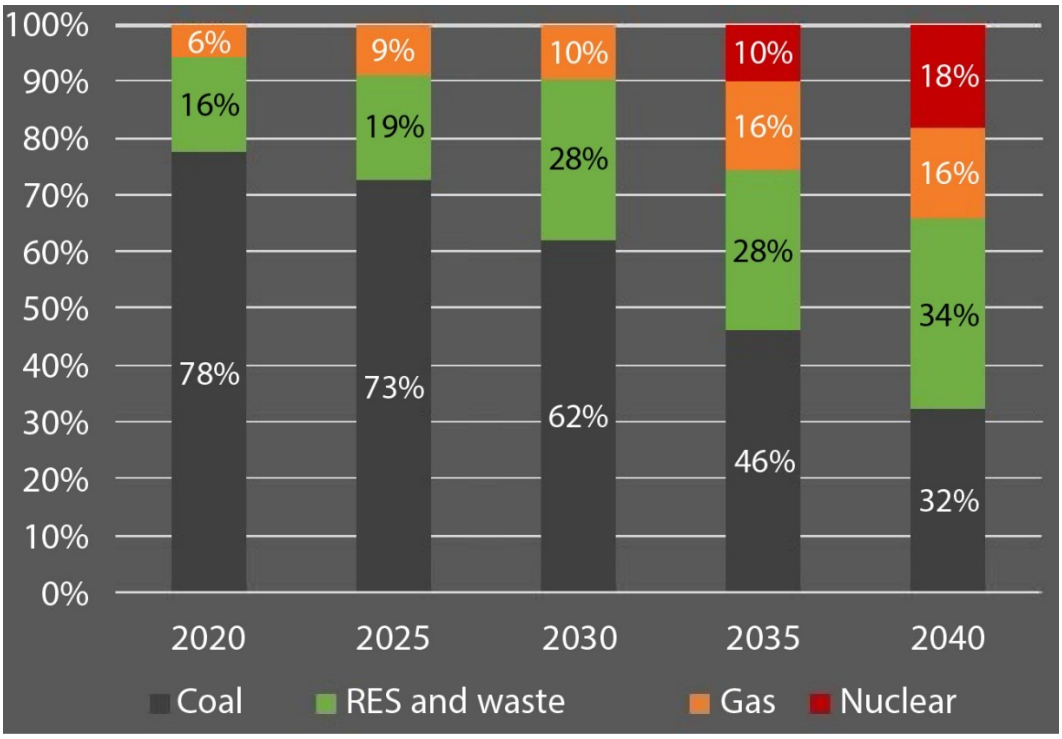

Figure 6. Forecast for electrical energy production sources in 2020-2040. Source: Project PEP40, government forecasts from 1927-1998, PSE, ARE, November 2018, https://wysokienapiecie.pl/15804-subiektywne-podsumowanie-2018-roku/.

According to the forecasts, a gradual departure from using fossil fuels for power purposes will take place (it is planned that the structure of production in 2020 will be as follows: 78% - coal, 16% - renewable energy sources and waste, 6% - gas) through diversification of the energy production structure in order to achieve the defined goal in 2040 and produce: 32% energy – from coal, 34% - from renewable energy sources and waste, 16% - from gas, while the domestic demand should be supplemented by 18% through the production capacity of nuclear energy[10]. The method of modifying the National Power System must ensure energy safety for the country, as well as cost reasonability. Many challenges have to be faced, primarily the climatic and energy policy of the EU through implementing low-emission management that will limit the negative impact of the energy sector on the natural environment. This will mean that large investment costs will have to be incurred, which may lead to increased costs of electrical energy[11]. Nevertheless, restructuring in a larger perspective will increase competitiveness and contribute to increasing the sector's effectiveness. The variability of energy production sources will reinforce energy safety in the country and will enable diversification of the supply of fuel and raw materials from various parts of the world.

[10] Energy Policy of Poland until 2040 (PEP 2040), Ministry of Energy, Warsaw, PEP 2040_projekt_v12_2018-11-23.pdf [accessed on 18 January 2019].

[11] The price increase in the country is also affected by taxes and fees imposed on producers (in Poland, 21% of the energy price is composed of taxes, whereas in Germany, the share of taxes is 2.5%, while in France, it is 1.6%). B. Gajdzik, *Forecasting changes of steel production size in Poland by means of the Force-Field method,* http://www.ptzp.org.pl/files/konferencje/kzz/artyk_pdf_2018/T2/2018_t2_596.pdf, p. 600 [accessed on 15 March 2019].

Conditions for restructuring the energy sector are grouped together with conditions applying to black coal mining and metallurgy, as presented in Table 1.

Table 1.
Black coal mining restructuring conditions along with conditions of restructuring the iron and steel industry and power industry in Poland

CONDITIONS	BLACK COAL MINING	IRONAND STEEL INDUSTRY	POWER
Economic	1. Low profitability of business 2. High fixed costs of operation 3. Low performance of operation 4. High unit costs of production 5. No reliable system for remunerating employees 6. Ineffective organisational structures 7. No financial means for restructuring	1. Low profitability of business 2. Financial loss 3. High fixed costs of operation 4. Ineffective organisational structures 5. No financial means for restructuring processes 6. Financial crisis on global markets 8. Bank loans covered by government guarantees	1. Impact of costs relating to applying rights and provisions to employees, incurred as a result of partial privatisation 2. Expenses for modernisation and restoring production capacity 3. Retirement allowance for employees 4. Optimisation of employment in state-owned enterprises
Mining and geological	1. Difficult conditions of mining 2. Increased depth of deposits 3. Risks related to exploiting deposits		
Political	1. Instable politics regarding the industry 2. Conformism of the government with regard to miners 3. Lack of continuity of implementing further restructuring programmes	1. Political changes, economic transformation, switching to market economy 2. Impact of the Polish government on decisions and management processes regarding the steel sector 3. No political willingness of the Polish government to implement restructuring assumptions	1. Political uncertainty related to ambiguous position of the government relating to indicating development direction in the industry
Legal	1. Managing a business activity based on the generally-applicable commercial law and according to the Geological and Mining Act, as well as executive provisions 2. Difficulties in obtaining a license for extracting coal 3. Introducing coal quality standards	1. Association arrangements with European Communities, which have indicated legal frameworks for restructuring 2. Public aid provided by the country by the end of 2003 3. Liquidation procedures 4. Separating areas that are not related to production of metallurgy goods	1. Implementing further organisational changes of the sector 2. Implementing the power market

Cont. table 1.

Market	1. Variable competition environment 2. Susceptible to changes of the economic situation 3. Prices of coal on global markets shape the market in the country 4. Increased coal import 5. Bidding power of global competitors 6. Bidding power of national players	1. Reduced market competitiveness 2. Reduced demand for steel products 3. Low quality of produced goods 4. Lower product sales 5. Production not adjusted to the changing market expectations 6. Worse market situation of clients, recipients of steel and steel products 7. Termination of commercial relationships and cooperation on existing sales markets abroad 8. Consolidation of steel producers 9. Liberalisation of the sales policy 10. Introducing customs duty rates	1. Higher level of importance of the solid image of power enterprises, increasing competitiveness 2. Speeding up market liberalisation
Social	1. Difficulties with arranging the matter regarding climate protection and improvement of economic results 2. Cooperation with local environment 3. Mining traditions 4. Cooperation of coal producers	1. Excessive employment 2. Expanded benefits 3. Pressure put on higher wages 4. Cooperation with local environment 5. Ensuring good relations	1. Restructuring employment 2. Process of changing qualifications of employees, demand for specialists in implementing new technologies 3. Concluding union work arrangements with guarantees to 2013 or even to 2017
Environmental	1. Degradation of the natural environment 2. Emitting pollution to the atmosphere 3. Preferring development of alternative energy sources	1. Degradation of the natural environment 2. Emitting pollution to the atmosphere	1. Restrictive position of the EU regarding emission reduction as well as the amount and prices of CO2 emission 2. Departing from economy based solely on conventional energy sources 3. Diversification of production sources
Technical and technological	1. Insufficient investment into mining processes 2. Long cycle of preparations for coal mining 3. Defectiveness of mining machines 4. Low level of use of mining equipment 5. Long path to reach the place of work 6. Necessity of applying innovative mining technologies and modernisation of coal processing plants	1. Small investment expenditures 2. Ineffective and excessive production capacities 3. Liquidation of old open hearth furnaces 4. Liquidation of raw material divisions in the following plants: Kościuszko, Bobrek and Batory 5. Organisational and technological changes, preceded by introducing breakthrough technologies by competitors 6. Resigning from developing new plants	1. Degradation of the conditions of technical energy infrastructure 2. Necessity of modernising and changing the production structure 3. Implementing works on modernising transfer and distribution grids 4. Modification of the power grid infrastructure

Cont. table 1.

Ownership	1. Functioning in most cases as state-owned companies 2. Capital associations with the energy sector	1. Privatisation, mergers and acquisitions of steel producers though bank composition proceedings 2. Sales made to foreign investors	1. Requirement of further privatisation processes, acquisition of strategic investors

Source: own elaboration based on: M. Kardas, W. Szulc, *Restructuring of the Steel Sector in Poland*, Works of the St. Staszic Iron Metallurgy Institute IMŻ 1), Warsaw 2010, pp. 220-228. https://www.imz.pl/common/files_download.php?fid=567 [accessed on 18 January 2019]; S. Słupik, *Restructuring of employment in the power sector in Poland, University of Economics in Katowice*, 26_S.Slupik__Restrukturyzacja_zatrudnienia_w_sektorze....pdf [accessed on: 21 January 2019]; Energy Policy of Poland until 2040 (PEP 2040), Ministry of Energy, Warsaw, PEP 2040_projekt_v12_2018-11-23.pdf [accessed on 18 January 2019]; M. Turek, *Technical and organisational restructuring of black coal mines*, Chief Mining Institute, Katowice 2007, p.67; I. Jonek-Kowalska, *Economic and social conditions of implementing new technologies in black coal mining,* Scientific Books of the Silesian University of Technology, series: Organisation and Management, book 113 no. 1991, Gliwice 2017, p.119; A. Zakrzewska – Bielawska, *Effects of ownership and organisational transformations in enterprises from the Łódzkie Province* [in:]; R. Borowiecki, A. Jaki (ed.), *Restructuring in times of economic transformation. Instruments – process – effects,* Academy of Economics in Kraków, Warsaw - Kraków 2005, p. 211-218; R. Patyńska, *Mining and geological conditions of exploiting deposits with a rock burst risk in 1987-2007, Managing mineral resources*, volume 24/2008, p. 229; A. Karbownik, K. Wodarski, *Concept of restructuring a coal company,* Mining Review, 2014, no. 9, p. 24.

However, the planned energy transformation (as underlined by the Projects of the Power Policy of Poland until 2040) should be based mainly on local energy resourced based on the principles of economic effectiveness. Focus should be placed on creating new jobs, which would make it possible to acquire employees from other restructured sectors, including the coal sector. The aim should be to re-cultivate and revitalise post-industrial areas and to be subject to further stimulation of innovative technology growth, which would improve the competitiveness of the Polish economy and increase the level of the quality of residents' lives.

5. Final conclusions

Each of the groups of conditions of traditional industry enterprise restructuring in Poland presented in Table 1 show the complicated functioning mechanisms and complexity of the impact of variable surroundings. In restructuring enterprises operating in the industries characterised above, i.e. black coal mining, metallurgy and power, multiple similarities and differences can be listed.

The need for restructuring has been caused by economic conditions, primarily through financial loss, economic crisis or low profitability. Furthermore, this has been caused by the market conditions related to their high susceptibility to changes in the economy and decreased competitiveness on the market. This also covers technical and technological conditions, i.e. the requirement for departing from outdated production technologies, ineffective and

excessive production capacities and the need for modernisation. Environmental conditions also play a role here, which force the need for environmental protection and CO2 emission reduction according to EU directives.

Furthermore, a change in the method of sector functioning, through diversification of production sources and departing from conventional energy sources, is also important, as well as social conditions, as traditional industry enterprises are some of the largest employers.

Nevertheless, political conditions have the largest impact on the functioning of the sectors discussed here, including unstable government policy and lack of continuity of introducing new restructuring programmes. This political uncertainty no longer applies to the metallurgy industry to such a high extent, as it has been privatised and is owned by international corporations. Market and environmental conditions play a key role in the case of this industry's functioning. However, they play an important role in the power and black coal mining industries, too, where enterprises are still owned by the state in most cases, while their further growth depends primarily on further privatisation processes and on acquiring strategic investors. Along with the differences in the ownership aspect, the legal factors are also worth noting. In the past, restructuring processes in black coal mining (this is still applicable, but only for production liquidation) and in metallurgy (until 2003) were conducted based on public aid that indicated its frameworks. The current legal situation does not allow for the subsidisation of development from public means. It requires one to urgently find other forms of investment financing, as the banking sector is not interested in cooperation. Furthermore, the mining sector has been running its business not only based on generally-applicable commercial law, but also according to the Geological and Mining Act, as well as executive provisions, which imposed significantly higher fiscal and legal obligations.

Furthermore, there are the mining and geological conditions related to the worsening conditions of coal extraction and increased depth of deposits, as well as occurrence of a number of natural hazards related thereto. Provisions applicable to each sector separately are also important, e.g. introduction of new quality standards of coal or the power market. The variability of the discussed sector also relates to internal conditions of functioning associated with other types of production. Traditional industry enterprises, namely black coal mining, extract raw materials that the power and metallurgy industry use in their business. It produces electrical energy and heat from coal and uses coal to produce steel, in this way creating a strong joint market.

Due to its length, this work does not exhaust the discussed issue. In view of the above, there is a need for continued research works in order to develop scientific bases, indicating forecasts regarding restructuring conditions, which may lead a traditional industry company to gain a strong competitive position on the market.

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