

## World Experience in Public Administration of the Transformation of Energy-dependent Regions in the Context of Their Sustainable Development

### Światowe doświadczenie w administracji publicznej i transformacji regionów zależnych od energii w kontekście ich zrównoważonego rozwoju

Inna Zablodska\*, Yevhen Akhromkin\*\*, Andriy Akhromkin\*\*\*,  
Liubov Bielousova\*\*\*\*, Iryna Litvinova\*\*\*\*\*

*\*Institute of Economic and Legal Research of the National Academy of Sciences of Ukraine,  
Sievierodonets`k, Ukraine*

*\*\*Department of Economic Security, Public Administration and Administration,  
State University Zhytomyr Polytechnic, Zhytomyr, Ukraine*

*\*\*\*Rivneoblenergo Private Joint Stock Company, Rivne, Ukraine*

*\*\*\*\*Department of Public Administration, Management and Marketing,  
Volodymyr Dahl East Ukrainian National University, Sievierodonets`k, Ukraine*

*\*\*\*\*\*Department of Environmental Technologies, Ecology and Life Safety,  
Semen Kuznets Kharkiv National University of Economics, Kharkiv, Ukraine*

*Address (corresponding author): Chudnivska Street, 103, Zhytomyr, Ukraine, 10005*

*E-mail (corresponding author): science.75@yahoo.com*

---

#### Abstract

The article is devoted to the research of the world positive and negative experience in public administration of the transformation of energy-dependent regions. The research is carried out in the context of the sustainable development of energy-dependent regions, which is one of the key global agendas for the transition of all countries to a low carbon economy and the reduction of greenhouse gas emissions, in the context of the UN Sustainable Development Goals to 2030.

The authors analysed the institutional features of the experience of just transformation in Australia and Poland, the shortcomings of the transforming process of energy-dependent regions in European countries such as the United Kingdom and the Netherlands, and also some initial directions for further energy transition in the German and Czech regions.

**Key words:** world experience, public administration, just transformation, energy-dependent regions, sustainable development, advantages and disadvantages

#### Streszczenie

Artykuł poświęcony jest badaniu światowych pozytywnych i negatywnych doświadczeń odnoszących się do administracji publicznej i transformacji regionów zależnych od energii. Badania przeprowadzono w kontekście zrównoważonego rozwoju regionów zależnych od energii, który stanowi jeden z kluczowych elementów w globalnym przejściu wszystkich krajów na gospodarkę niskoemisyjną i redukcji emisji gazów cieplarnianych, biorąc pod uwagę Cele zrównoważonego rozwoju ONZ do 2030 r.

Autorzy przeanalizowali cechy instytucjonalne przykłady sprawiedliwej transformacji w Australii i Polsce, niedociągnięcia procesu transformacji regionów zależnych od energii w krajach europejskich, takich jak Wielka Brytania i Holandia, a także kilka kierunków możliwej dalszej transformacji energii w Niemczech i Czechach.

**Słowa kluczowe:** światowe przykłady, administracja publiczna, sprawiedliwa transformacja, regiony zależne od energii, zrównoważony rozwój, zalety i wady

---

## Introduction

In recent years, the concept of *just transition* or *just transformation* has emerged in European countries, the essence of which is to plan the processes of sustainable public administration development of territories (regions), which will be affected by the process of fossil fuels abandonment in close comparison with social justice and fair employment, ensuring a decent life and a fair living for all workers and communities.

In today's economic environment, the theme of energy-dependent regions transformation as a main part of ecologic component of sustainable development is one of the key global agendas. For instance, in 2015, the International Labour Organization published *Guidelines for a Just Transition Towards Ecologically Sustainable Economy* (International Labour Organization, 2015) to help the countries in transition to a low carbon economy and achieve their planned strategic goals for reducing greenhouse gas emissions in the context of the UN 2030 Sustainable Development Goals.

It is well known that an important principle of managing the processes of fair transformation is the broad social dialogue between all stakeholders in this process (Zelinska, Fedorovych, Andrusiv, Yurchenko, 2019): not only representatives of state authorities and local self-government, but also civil society, scientific, expert, business and information environment. In addition, this process is part of structural changes in the economy (as a part of economic component of sustainable development), so it is important to remember that some changes occur quickly and dramatically (possibly caused by the effects of war, recession, or dramatic technological change), while other structural adjustments – such as industrialization or transition from the sphere manufacturing to the service industry can take decades.

The European integration vector of development chosen by the Ukraine requires the transformation of national energy policy through climate change in the world, environmental challenges, increasing greenhouse gas emissions, inefficient and irrational use of depleted resources (Zablodska, Sieriebriak, Kolomytseva, Dzhumageldiyeva, Rohozian, 2019). Therefore, in this context, the positive and negative conclusions reached by the countries with experience in the transformation of energy-dependent regions will could play in the future an important role in correcting certain tasks, goals and priorities in the formulation of documents related to the sustainable development of territories in a strategic dimension.

### Institutional and public administration features of just transformation experience of the world energy-dependent regions

#### 1. Australia

For most of, the metallurgical works of the City of Newcastle, the Latrobe Valley region, and the

nearby coal mines, were a landmark pillar of Australia's industrialization and the flagship of Australia's largest corporation, VNR. A significant amount of workforce (16,000 people in the 1960s) and a direct impact on employment have made this enterprise the basis of the economy of this city and the energy-dependent territory of New South Wales region.

Coal mining and electricity, which have formed the basis of the mill's operations, have also been important sites for local identity for many decades (Jones S., Tee C., 2017). However, due to technological aging and the relatively small scale of production that could not compete with similar East Asian enterprises, the metallurgical plant and adjacent coal mines began to encounter difficulties in the early 1980s. At that time, the Australian Government provided targeted financial assistance for restructuring ecological projects, which led to the suspension of the coal and metallurgical sector and, consequently, a significant reduction in the workforce, forcing local workers to reorient and to work in the field of services (Newcastle Herald, 2009). Despite the fact that the possible closure of the city-forming enterprise was announced in two years, this news was extremely traumatic for the city and for the whole region.

The whole process of region transformation in the sustainable development terms has been controversial in many aspects. Yes, it had tremendous support from the country's prime minister, but planned ecological projects aimed at just transformation received too little public funding but did not take into account the influence of the economic and social components of the sustainable development of this territory. These developments gradually began to bring together three levels of government (national, regional and local), as well as business, trade union and community groups, at meetings where consensus and prospects for regional sustainable development were anticipated, taking into account the interests of each stakeholder.

However, attempts to build new sustainable development strategies for Newcastle based on tight control of the national government have failed. As a result, the management of all Latrobe metallurgical and coal industries, without waiting for external assistance, merged and used two years before the final closure of their business entities to assist their employees in finding another job: first of all, career counsellors and recruitment, individual retraining programming professionals, discharged employees and senior employees who go on pension (this type of corporative responsibility was rare for Australia) (OECD, 2016).

Finally, the overall process of the just transformation of the Latrobe Valley region was able to achieve its operational purpose with the help of agreements reached between national and regional authorities in the **public administration process**, which were embodied in the National Territorial Transformation

Program, 5000 new workplaces were created, but many people, who were unable to retire, were still unemployed (Murphy, 2014). Finally, most of the proposals for the sustainable development of new industries in the **energy-dependent** region, the formulation of cluster policies and strategies for highly skilled workers have failed (Gunasekara, 2008).

### 1.1. *The advantages and disadvantages of proposed public administration process of the Australian region transformation:*

It is fair to say that some of the proposals for the **public administration** of the Latrobe Valley region transformation have positives: in terms of job creation, as well as in terms of attracting all key stakeholders to solve common problems in the region.

However, the lack of funding and lack of autonomy to attract foreign investment has undermined the potential for innovative development, local entrepreneurship and a more sophisticated economic structure. In general, the weaknesses of the proposed transition of region also included the lack of alternative work for workers and the unwillingness to retire many older workers without adequate compensation. The proposals for the country's gradual abandonment of coal production have continued in Australia's current energy program, but the conflicting goals of the public policy about the sustainable development influence have hindered its successful implementation. During the 2014-2016 periods, the international authorities in the interregional forums discussed with the Australian authorities' issues related to the future sustainable development of its low carbon environment and how to manage the equitable transformation of coal regions with the gradual transition of workers to this area.

However, again, as in 1997-1999, major changes were due to corporate business decisions, this time taken overseas (Snell, 2018). In November 2016, French energy company Engie, whose executives bought a management stake in Australia's VNR, announced the decision to close all its plants to reduce carbon emissions and reduce the company's high operating costs in the context of sustainable development program. The announcement of the closure again came as a big shock to all workers, trade unions and local communities, but this time the government responded by setting up *the Latrobe Valley Economic Facilitation Fund*.

To help the affected workers and their families, this fund has proposed the following public initiatives:

- the gradual transition of all workers to new workplaces in other industries (related to economic and social elements of the sustainable development), the provision of legal services and the development of new skills for all affected groups in the region;
- a financial support for retraining: under a collective agreement, VNR employees were entitled to retraining funded by the company. For contract workers, the government agreed to provide

subsidized support for retraining or further training;

- a scheme of workers transfers to workplaces to the power stations and factories in other regions, agreed with the trade unions and the regional public authority; gave other employees the possibility of early retirement;
- the economic and social public administration initiatives aimed at ensuring the sustainable development of the region. In view of the fact that the just transformation has demanded and continues to require ample employment opportunities, it has been announced that a special economic zone of the *Latrobe Valley* region with appropriate financial incentives has been announced.

### 2. *Poland*

In the early years of the **public administration process of transformation** the **energy-dependent** regions and the entire coal industry in Poland, the toolbox was very limited. The first two social security instruments for miners introduced in 1993 were holidays and social assistance payments. The vacation was a form of early retirement for miners, to which bonuses and special allowances for hard work were added, and the payment of social assistance was, in fact, a form of voluntary dismissal (paid over two years to miners who remained more than three years before retirement age) (Karbownik, Bijańska, 2000). Such payments stimulated the process of reducing employment at coal enterprises and allowed the closure of the most unprofitable mines.

Since 2002, and especially after Poland's accession to the EU in 2004, public administration and political stability have begun to emerge in the country as the EU has begun to directly influence the processes of strategic planning for sustainable regional development. However, it did not bring a significant improvement for the coal industry: wage arrears dating back to the 1990s were eliminated, but the elimination of unprofitable mines ended and thus stopped the reduction of labour. According to EU legislation, the subsidization of the coal industry ended in 2003, so since the state aid has only been granted to the economic projects related to the closure of coal enterprises.

However, since 1993, the country has embarked on a path of just transformation of the entire coal industry; a list of main software tools of the public administration process is given in Table. 1.

It should be emphasized that the implementation of concrete measures for the public administration of the energy-dependent regions transformation and the entire coal industry of the country was at a rather low level until 1993-1998, which immediately preceded the reform. Previous measures aimed at limiting employment in the coal industry have proved ineffective (due to the lack of new skilled workers). In order to ensure the profitability of the real sector of economy as a part of sustainable development in Poland

Table 1. The main public administration tools for the transformation of the energy Poland industry, built by authors according to (Makiela, 2002; Paszcza, 2010; Przybylka, A., 2013).

Years	The name of tool	The implementation results of proposed measures
1993-1998	The coal restructuring program, The bankruptcy program for coal enterprises, State program for the transformation coal mining regions in a market economy and international competition for the period 1996-2000.	Designed as the first steps in the process of the transformation of coal industry, they focused only on its profitability. The provisions of the data programmatically described the technical features of the transformation of coal regions, without solving the accompanying problems in the socio-economic and financial spheres, so they were unable to achieve positive results.
1998-2002	Poland's Coal Industry Reform Program for the period 1998–2002.	The most sophisticated and ambitious program to expand the number of tools available for a fair transformation of the industry and the introduction of greater support for coal companies.
2002-2003	Program for Transformation of Coal Mining Regions in Poland for the period 2003-2006.	The provisions of program provided a pool of anti-crisis actions, the primary role of which was given to the process of privatization of individual coal enterprises with a simultaneous gradual reduction of labour force; it has been expanded and updated in another strategic document.
2003-2006	The Coal Transformation Program and the Polish Coal Transformation Strategy 2007-2010 formed on its basis.	The documents gradually restricted access to the coal resources in 2004-2006 and justified the need to close some coal enterprises by 2010.
2007-2015	Poland's Coal Mining Transformation Strategy for 2007-2015.	The strategy's provisions focused on the transformation of coal enterprises, increased investment in research activities, increased production efficiency, which led to increased employment (trying to maintain a balance between the economic, social and environmental sphere of sustainable development of the whole country and its regions).
2015-2018	Strategy for the Development of Polish Energy Policy by 2040. (valid)	According to the strategy, coal will remain the most important source of electricity generation by 2040, although its role will gradually decline. In 2030, coal will account for nearly 60% of electricity production, though by 2040 its share will be reduced to less than 30%. The implementation of this document faces strong opposition due to potential negative environmental impacts due to ecologic component of the Poland's sustainable development.
2019	National Energy and Climate Plan for 2021-2030. (valid)	Provisions of the strategy are made in full accordance with the concept of sustainable development. Gradually abandoning coal, Poland will ensure a just transformation of the region's industries through the transition from thermal generation to renewable energy sources, which will provide additional profitability. The implementation of these measures will also help reduce energy poverty and air pollution. Under such conditions, the expected increase in electricity demand against the background of the diminishing role of coal will be covered primarily by gas, wind and solar, and subsequently by nuclear generation.

(Rohozian Yu., Zablodska I., Tatarchenko O., Zavoyskih Yu., Korsakova O., 2017), there was a need to introduce stronger motivation for the transition of workers from the coal industry to the enterprises of other industries (to implement the concept of sustainable development, it was envisaged to offer first-rate work at those people-oriented enterprises and to preserve the stability of social and cultural systems, including reducing the number of conflicts between former employees of energy enterprises) (Faliszek, 2011). At the same time, the preparatory process for accession to the EU has accelerated, so the need to reduce the size of government subsidies as a part of public administration police for the mining sector (through EU competition laws) has become urgent. In all previous public administration instruments, up to 1998, the measures to mitigate the effects of the

transformation of energy industry were devoted almost exclusively to miners whose jobs were at risk due to the elimination of mines: they were offered early retirement or special wage allowances. However, the amounts offered were not high enough to attract new, more skilled workers, so the result of these measures implementation aimed at reducing social tension is considered negligible.

The authors of program, provided in 1998 (*Poland's Coal Mining Reform Program for 1998-2002*) have chosen a different strategy all prospective miners have been offered higher amounts of compensation and wages for their fair transition from mining to other workplaces. This program and all the following strategic documents, based on its provisions, contained two important aspects:

1. Presence of a special law: for the first time, the programs were confirmed by a special law on mining, adopted by Parliament, which clearly defined the objectives, tools for social mitigation of the transformation of coal regions and the whole industry, sources and conditions for financing the program, as well as control its implementation.
2. Scale: the programs began to include sustainable priorities such as environmental protection, cooperation with mining communities and other regions in the context of the EU standards implementation (in view of the ongoing process of Poland's accession to the EU). Now when creating the transport infrastructure, preference was given to more environmentally acceptable transport and enterprises (Lorenz, 2011).

At the same time, the economic viability of the energy industry remained the main goal of all subsequent strategic documents, although its role would gradually diminish. According to the 1998 program, the viability of coal industry had to be ensured primarily by reducing employment, which reached about 105,000 workers by 2002 (of the total 243,300 mine workers). The authors of the following documents suggested that this goal could be achieved through voluntary redundancies as a result of a social package adoption for miners (approximately 65,000 workers) and by reaching retirement age (approximately 40,000 workers). It should be noted that this worked: the total number of beneficiaries of the social mining package from 1998 to 2002 was 67,000 workers, and the total number of workers subject to redundancies was 102,600 people.

An important role in mitigating the social impact of employment cuts was given to the local authorities in selected *mining communes*, which were intended to help create jobs in the regions. In addition, there was mitigation measures formed in the so-called *social package of the mining industry*.

The social package contained three types of tools, referred to as *security* and *activation*:

- a) Miners vocation: The main *safeguard* instrument was the miners' vocation in the form of early retirement (those employees who were not more than 3 years old before acquiring legal pension rights were entitled). Initially, she was paid 75% of its monthly salary, and after the employee reached legal retirement rights, the miners began to receive full payments;
- b) Social assistance: another *activating* instrument is a voluntary redundancy cash benefit – 65% of the average monthly salary, paid monthly during the period of employee retraining and job search, but not longer than two years. After employment outside the mining sector, recipients of social assistance were awarded a single monetary com-

pensation in the amount of an average salary for 14 months of work. The proposal only applies to those who have been hired within two years of being fired from the coal industry;

- c) Retraining: all former miners, both underground and terrestrial were entitled to a retraining course in order to increase their performance outside the mining sector (Karbownik, Bijańska, 2000).

## 2.2. *The advantages and disadvantages of implementing the public administration programs from 1998-2006*

The main factors are:

- Trade union representatives were always involved in the process of preparing the public administration tools, which enabled the implementation of a rapid and large-scale employment reduction program without significant social upheaval;

- The incentives offered to the miners were successful, the number of miners who took advantage of this proposal turned out to be even slightly higher than expected. Almost 37,000 workers took vacations, nearly 30,000 chose early retirement. In total, there were a reduction of 67,000 workers in the coal industry, while labour productivity increased by 40% between 1998 and 2002 (Kaczorowski, Gajewski, 2008);

- *Active labour market policy* in the form of payments was only theoretically *active*. The idea behind the event was for former miners to invest in their own new business or at least receive financial support for their professional training. However, with the exception of one elective course, there was no comprehensive support for such workers in the difficult job search process (Karbownik, 2005);

- One-time payments to employees were difficult to manage. The first wave of an evaluation survey (conducted in 2001) showed that many former workers spent their money on household items, meaning they were unable to invest or save money. Thus, the economic situation systematically worsened after the miners were laid off: in 2003, 5.8% of former workers stated that they could not afford to cover even basic necessities (food, clothing); while in three years 12.8% said they also encountered this problem;

- Social assistance turned out to be a bad move as it did not attract much attention among the mine workers in total only 419 people chose this option. This was contrary to the expectations of the authors of program, who considered this assistance in combination with the payment of bonuses (if hiring a new job) the most attractive incentive and the most motivating option (Turek, Karbownik, 2005). However, the need to look for a new job within two years seems to

have been perceived by employees to be an excessive risk, given the lack of experience of such a job search and professional competence.

### The main public administration directions of the energy-dependent regions transformation in the countries of South-Western Europe

#### 1. Great Britain

South Wales is one of the poorest regions of the UK. At the beginning of the XX century, energy production was the basis of local industry, employment, and local identity. In 1921, about 270,000 people were directly employed in the coal mines regions, accounting for more than 20% of the UK's total employment (Merrill, Kitson, 2017). However, the gradual decline and eventual collapse of the coal mining regions over the next 70 years has led to persistent high levels of unemployment, poverty and labour migration (Morgan, 2008). By 1939, the number of employees in the mines was less than 129,000, but fluctuated around 113,000 by the end of the 1950s, and subsequently, the mines lost another 15,000 jobs. Overall, in the 1960s, 50,000 workplaces were eliminated and less than 30,000 remained in the 1970s (Government of Wales Statistics and Research, 1998).

Finally, in the middle of the 1980s, thanks to a public program of the most state-owned coal industry closing, an aggressively-minded UK government saw a prolonged but unsuccessful strike by national miners. Following the collapse of the strike, the government closed most of the mines remaining in the Valleys in South Wales (Fothergill, 2008), which deprived the region of alternative employment opportunities for the population and significantly weakened the impact of unions that could do nothing.

During this long history of the decline of the energy industry, various public administration programs have been created to transform the energy-dependent regions as territories of other industries and to enable local residents and workers to adapt to this transition. However, none of these documents could change the structural economic decline of the region, even if some provisions were implemented.

Between 1934 and 1976, a British Labour government implemented policy initiatives to promote the development of the energy economy. Their provisions were superficially similar to successful regional transformation plans adopted in other countries, whose main industries were also severely declining, but still included elements of a just transformation in the sustainable development conditions: retraining allowances and relocation for former miners; free housing; development of transport infrastructure and industrial development projects; an effective water supply and sanitation system began to be created in conjunction with local systems for recycling used water; a full-fledged local economy was developed in the framework of small communi-

ties and small businesses, providing diversity and self-sufficiency (Merrill, Kitson, 2017). However, these initiatives failed to provide the people and workers of South Wales with decent working and living conditions.

#### 1.1. The disadvantages of implementing the South Wales State Public Transformation Programs

The main factors are:

1. Absence of a public administration policy for planning the just transformation of the **energy-dependent** region.
2. Lack of correlation between the provisions and components of the proposed transformation and the economic, social and environmental spheres of development, lack of cooperation and coordination between key stakeholders.
3. Ignoring the economic and ecological features of each territory included in South Wales.
4. Insufficient funding for key initiatives.
5. The national government's unwillingness to the mine workers in general, their hostility to any trade union initiatives.
6. Implementation of the public administration initiatives based purely on the principle *from top to bottom* and their focus on subsidizing the energy companies, not on comprehensive solutions to the problems associated with the process of region transformation.
7. Insufficient attention to transport and information infrastructure costs, cluster development or local innovation in the sustainable development spheres.

#### 2. The Netherlands

Limburg is a province in the south of the Netherlands that experienced a significant and rapid growth in energy production in the 1950s. As a result, the regional economy of Limburg has become heavily dependent on coal and gas production through increased employment and income. In 1965, approximately 75,000 workplaces were at the coal mines and enterprises, together accounted for just over a third of Limburg's total labour force.

However, since the middle of the 1960s, a coal production and employment rates began to decline rapidly due to the inability of Dutch coal mines to compete with overseas coal producers and due to intense competition with low-cost European natural gas enterprises. In 1974, the last Dutch coal mine closed. The unemployment rate in Limburg in the period 1960-1984 was just over 20% (Gales, Holskens, 2017).

With the decline and final closure of coal production in Limburg, regional unemployment was high. By 1990, the structural public administration policy, aimed at diversifying the economy of Limburg and improving its results, reduced unemployment to almost half its peak level. It was a major achievement, as regions that are losing so much of the dominant

industries are quickly entering a long-term stagnation or permanent decline.

In the early 1960s, key public administration policy makers began to anticipate and accept the inevitable decline in demand for Limburg coal. This adoption became the official policy of the Netherlands in 1965. The gradual control over the economic downturn over the coming decades allowed the costs associated with the decline of the coal industry to be amortized over a long period rather than appearing unexpectedly and suddenly. It gave the government, individuals and companies the time to prepare and adapt (Caldecott, Sator, Spencer, 2017).

The relatively high level of consensus among coal mining trade unions, mine managers/ owners and government representatives has been decisive for the successful just transformation of the region and the achievement of relevant objectives. Consensus on the probable future of the energy industry was particularly important. Obviously, all key stakeholder groups sought to avoid unpredictable and lightning-fast costs, so they all shared a common interest in ensuring proper planning for the industry's gradual decline and at the same time supporting other industries, creating additional employment opportunities for all those involved in the process, resulting in large-scale cooperation between all parties on the process of equitable transformation of coal territories (Gales, Holsgens, 2017).

At the same time, the cabinet of the Netherlands has taken on an important role in retraining the region's coal miners to work in new and more advanced industries (agriculture, machine and shipbuilding and light industry for calculations of the functional purpose of each enterprise, taking into account demographic prospects, regional economic specifics and even the realities of macroeconomics), which has helped to shape a highly centralized approach to the sustainable development and structural adjustment policy of the region, which turned out to be quite successful.

All key stakeholder agreements reached were reflected in the *Common National Structural Adjustment Program for Coal Regions*, which was characterized by a number of benefits. The vision of the public administration and program developers as to the issue has been relatively stable over the decades and has been widely supported by relevant stakeholders and has therefore been financially supported. In addition, this document is consistent with the practice of sustainable territorial development, which has resulted in a significant mitigation of the worst effects of the region transformation for miners. The key actions of the *Common National Structural Adjustment Program for Coal Regions*:

1. Reaching an agreement with the coal companies on the timing of each mine closure and final exit from the market.

2. Providing these companies with the state subsidies to start their activity in the new industrial sectors of the region.
3. Significant increase of funding for regional education, especially in higher education institutions (including the creation of new universities and colleges).
4. Significant increase of investment activity in the infrastructure of region, especially environmentally friendly transport;
5. Direct assistance to businesses in the transition from coal by promoting innovation, accelerating the transfer of knowledge and developing new skills, opportunities and knowledge of workers in new industries;
6. Promoting family employment between miners (it was a great risk because the miners' children no longer wanted to follow local traditions and work in the same industry as their parents);
7. Generous social packages, including the possibility of early retirement for senior workers;
8. Creating the economy and social opportunities for retraining young workers. Emphasis was placed on assisting former employees of the coal enterprises in new workplaces;
9. Broad support for the sustainable development of the region and the regional business clusters. For the most part, this tool has been implemented through public administration support and funding from public authorities to improve collaboration with the large enterprises in the region to share innovation/ research and knowledge (Kasper, Knotter, 2013).

### 2.1. The advantages and disadvantages of a public administration policy of the Limburg just transformation

The main factors are:

- The representatives of public and regional administration constantly interacted and addressed serious external problems (an important factor of success was the fact that the interaction between the authorities started before the outbreak of the coal industry crisis, which made it possible to carry out highly efficient planning of process). Yes, they jointly managed, coordinated and funded properly the activities for the establishment and implementation of the *Common National Structural Adjustment Program for Coal Regions*, jointly with employers and trade unions;
- The representatives of public authorities invested considerable funds in order to support transport and information infrastructure, higher education and training, and to promote the innovation of private enterprises (especially through cluster interaction) in order to quickly rebuild the territories of region and ensure the decent work of former coal workers;

- In line with the Dutch tradition of *social partnership*, trade unions have played a leading role in the sustainable development and implementation of socio-economic policies for the transformation of the coal region, which facilitated prompt responses to the emerging changes through consensus, as all necessary consultations were carried out directly in the workplace (Caldecott, Sator, Spencer, 2017);
- The country is characterized by a sufficiently high level of industrial relations culture, which facilitated the fair and almost conflict-free transition of energy enterprises workers to the new workplaces, as they were supported as much as possible and provided considerable compensation to those who decided to leave the labour market.

### 3. Germany and the Czech Republic

Today, the subject of the regional just transformation has become one of the key global agendas. In 2015, the International Labour Organization published Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All. One of the main goals of this document is to help countries transition to a low carbon economy and achieve their planned nationally agreed targets for reducing greenhouse gas emissions and the UN Sustainable Development Goals by 2030.

The positive results of such a dialogue can be observed in some EU countries. Thus, in Germany, the process of structural transformation of the energy sector by the public administration policy began in the middle of the last century. Since then, employment in the coal industry has decreased from 750,000 workers in 1957 to 20,000 workers in 2018. The country's last coal mine was closed last autumn. German politicians realized in time that there was no single industry that could replace coal mining. This requires strategic diversification of the economy. As a result, renewable energy facilities, technoparks and universities have begun to be built on the site of former production facilities. The most famous is the example of the city of Dortmund, where an artificial lake (Phoenix-See) was built on the site of a former steel mill, around which a modern quarter with business centres and private homes grew (Vondrova, Venert, Ginya, Dudeu et al., 2019).

Germany is a useful example of transformation by public administration policy. It is the first in the world to begin the process of complete abandonment of coal in the energy sector and plans to complete it by 2035-2038. In order to improve the social and economic situation in the mining regions, the government has taken a course on the sustainable development including education and science, technological innovation, infrastructure development, environmental and cultural projects. Now the Ruhr region, which was the center of energy production, has

become one of the most innovative, and the environmental situation there has improved significantly. Our countries are very different in their abilities, but Ukrainians could learn useful lessons from the German experience and take it into account during developing their own transformation plan (Shults, Prytula, Samilo, Maslov, 2019).

Similar processes are occurring in the Czech Republic. In October 2015, at the initiative of public and local representatives, the Czech government decided to develop a strategy for the economic restructuring of three energy-dependent regions - the Ústecký, Karlovy Vary and Moravian-Silesian regions. As a result, the program Re: START was developed. Its initial action plan foresees an allocation of € 1.5 billion for the sustainable development of the territories over the first three years. Strategy defines business, innovation and social stabilization as central elements of transformation.

As a result, several *innovation centres* have been opened to stimulate business in the regions, training programs have been implemented for local people and city leaders (*Místa zblízka*), and mobilization platforms have been created to work on rehab options for the region (Vondrova, Venert, Ginya, Dudeu et al., 2019).

In addition, Germany and the Czech Republic are one of the countries implementing the Coal Regions in Transition Platform of the European Commission Platform for Coal Regions. Created at the end of 2017, it now brings together 19 coal regions in seven countries of the European Union. The main purpose of the Platform is to provide a financial and technical support to the coal mining towns and territories.

### Conclusions

The public administration policy of the just transformation energy-dependent regions is closely linked to the loss of well-paying workplaces that require relatively low skills. In addition, in traditional coal mining areas, an employment in these workplaces is directly linked to the employee's social status. These factors will impede the transition of miners to new workplaces, since achieving such benefits requires significant, longer efforts. As the experience of represented countries shows, the diversification of the transformation instruments of the energy-dependent regions and the sphere as a whole will lead to at least some miners opting for short-term profit (one-off payment) rather than long-term re-qualification for benefits.

Given the confrontational discourse that is typical of any transformation process in public administration dimension, it is difficult to reach long-term consensus among key stakeholders (government, trade unions, and employers) on the strategic direction of change. In such circumstances, negotiations are usually conducted discreetly (separately with each



party). In Poland, it has resulted in the lack of effective tools for implementing and evaluating just transformation, which has undermined the chances of reaching consensus. As a result, any strategic refinement of public administration policy that could potentially be beneficial to the mining sector was impossible. Therefore, the implementation of such a policy must be preceded by a thorough scientific evaluation of all the features of the process of just transformation of the energy-dependent regions and the industry as a whole, taking into account the sustainable development features of each region and the mountain communities (if any), which will be primarily affected by this process.

If a country has an energy-dependent economy, rapid transformation of this type of industry is virtually impossible. For this reason, it is necessary to create in advance conditions for balanced and sustainable development of regions and communities, which should include support for alternative, labour-intensive sectors of the economy, increased investment in transport infrastructure to stimulate labour mobility or improve the education system. In the EU countries, it has been made possible through the attraction for foreign capital and the use of the EU funds, which has helped to develop transport and information technologies, to improve the urban passenger transport system. Therefore, it is important to ensure parallel sustainable development pathways to monitor the reduction of the coal industry and to evaluate the real impact of this process on the development of related industries.

The public administration process of just transformation of the energy-dependent regions in the represented countries, for the most part, is still incomplete. Although sustainable development elements were generally observed in countries, the social losses from the proposed programs were quite high, especially for the coal workers. The public administration instability, fragmentation of political parties, and the intense social tensions that accompanied the initial periods of transformation created barriers to long-term sustainable development programs. In addition, the lack of broad positive experience in other countries of the world forced the public administration developers of strategic documents to constantly experiment, which did not contribute to a just transformation of the regions. Also, the territorial aspect of the transformation was also an important cause of emerging problems because it did not take into account the balance between all sustainable development components of the energy-dependent regions and those territories that are part of them. An employment reduction, which initially took the form of exhaustion, soon had to be supplemented by other tools, and early retirement schemes and generous payments to miners made it possible to close down the most unprofitable mines, but at the same time create greater social problems as a professional inertia among miners.

## References

- INTERNATIONAL LABOUR ORGANIZATION, 2015, *Guidelines for a just transition towards environmentally sustainable economies and societies for all*, [http://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---emp\\_ent/documents/publication/wcms\\_432859.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf) (29.03.2020).
- ZELINSKA H., FEDOROVYCH I., ANDRUSIV U., YURCHENKO N., 2019, Modelling of the Gas Transmission Reliability as a Component of Economic Security of Ukrainian Gas Transmission System, in: *7th International Conference on Modelling Development and Strategic Management of Economic System, Advances in Economics, Business and Management Research*, 99, p. 127-132.
- ZABLODSKA I., SIERIEBRIAK K., KOLOMYTSEVA O., DZHUMAGEL-DIYEVA G., ROHOZIAN Yu., 2019, Interregional partnership as a background for the sustainable development: European facet, in: *European Journal of Sustainable Development*, 8(2), p. 365-378.
- JONES S., TEE C., 2017. *Experiences of Structural Change, Economic Roundup, The Treasury, Australian Government*, <https://treasury.gov.au/publication/p2017-t213722b/> (29.03.2020).
- NEWCASTLE HERALD, 2009. *Ten Years after BHP*, <http://www.theherald.com.au/story/446711/ten-years-after-bhp/> (27.03.2020).
- ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD), 2016, *Back to Work – Australia. Improving the reemployment prospects of displaced workers*, Paris, France.
- MURPHY D., 2014, *Newcastle's steely resolve masks painful scars from BHP shutdown*, <http://www.smh.com.au/nsw/newcastles-steely-resolve-masks-painful-scars-from-bhp-shutdown-20140219-330y9.html> (30.03.2020).
- GUNASEKARA C., 2008. Network Governance amidst Local Economic Crisis, in: *Australian Journal of Political Science*, 43(2), p. 207-223.
- SNELL D., 2018, 'Just Transition'? Conceptual challenges meet stark reality in a 'transitioning' coal region, in: *Australia, Globalizations*, 15(4), p. 550-564.
- KARBOWNIK A., BIJAŃSKA J., 2000, *Restrukturyzacja polskiego górnictwa węgla kamiennego w latach 1990-1999*, Gliwice, Poland.
- ROHOZIAN YU., ZABLODSKA I., TARCHENKO O., ZAVOYSKIH YU., KORSAKOVA O., 2017, Assessment Process of Economic Expediency for the Interregional Cooperation: Ukrainian-Polish Content, in: *International Journal of Economic Research*, 14(16), p. 375-386.
- FALISZEK K., 2011, *Gmina górnicza jako podmiot polityki społecznej*, Górnośląskie Studia Socjologiczne, Poland.
- MAKIEŁA Z., 2002, *Wyniki realizacji programów restrukturyzacji górnictwa węgla kamiennego po 1989 r.*, Warszawa-Kraków-Rzeszów, Poland.
- PASZCZA H., 2010, Procesy restrukturyzacyjne w polskim górnictwie węgla kamiennego w aspekcie zrealizowanych przemian i zmiany bazy zasobowej, in: *Górnictwo i Geoinżynieria*, 34(3), p. 63-82.
- PRZYBYŁKA A., 2013, Wpływ programów restrukturyzacji na ograniczenie zatrudnienia górników, in: *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach*, 161, p. 102-112.

16. LORENZ U., 2011, Ewolucja podejścia do cen węgla energetycznego w Polsce w latach 1989-2010, in: *Przegląd Górniczy*, 6(945), p. 314-321.
17. KACZOROWSKI P., GAJEWSKI P., 2008, Górnictwo węgla kamiennego w Polsce w okresie transformacji, in: *Folia Oeconomica*, 219, p. 201-227.
18. KARBOWNIK A., 2005, *Zarządzanie procesem dostosowawczym w górnictwie węgla kamiennego w świetle dotychczasowych doświadczeń*, Gliwice, Poland.
19. TUREK M., KARBOWNIK A., 2005, Ocena skuteczności górniczego pakietu socjalnego w restrukturyzacji zatrudnienia w górnictwie, in: *Zeszyty Naukowe Politechniki Śląskiej, Seria: Organizacja i Zarządzanie*, 27, p. 7-14.
20. MERRILL T., KITSON L., 2017, *The End of Coal Mining in South Wales: Lessons learned from industrial transformation*, <https://www.iisd.org/sites/default/files/publications/end-of-coal-mining-south-wales-lessons-learned.pdf> (30.03.2020).
21. MORGAN K., 2008, *Rival Visions: Relative Decline Or Regional Renewal?* <http://www.iwa.wales/wp-content/uploads/2016/03/valleys-with-crop-marks.pdf> (25.03.2020).
22. GOVERNMENT OF WALES STATISTICS AND RESEARCH, 1998, *Digest of Welsh Historical Statistics 1974–1996*, <https://gov.wales/digest-welsh-historical-statistics-0> (31.03.2020).
23. FOTHERGILL S., 2008, *The Most Intractable Development Region in the UK*, <http://www.iwa.wales/wp-content/uploads/2016/03/valleys-with-crop-marks.pdf> (30.03.2020).
24. GALES B., HOLSGENS R., 2017, *Coal transition in the Netherlands*, [https://www.iddri.org/sites/default/files/PDF/Publications/Catalogue%20Iddri/Rapport/201706-iddri-climatestrategies-coal\\_nl.pdf](https://www.iddri.org/sites/default/files/PDF/Publications/Catalogue%20Iddri/Rapport/201706-iddri-climatestrategies-coal_nl.pdf) (31.03.2020).
25. CALDECOTT B., SATOR O., SPENCER T., 2017, *Lessons from previous 'coal transitions'*, [https://www.iddri.org/sites/default/files/import/publications/coal\\_synthesisreport\\_v04.pdf](https://www.iddri.org/sites/default/files/import/publications/coal_synthesisreport_v04.pdf) (21.03.2020).
26. KASPER J.D.P., KNOTTER A., 2013, *Na de mijnsluiting, herstructurering en reconversie in international perspectief*, Roermond, The Netherlands.
27. PRYTULA H., SHULTS S., SAMILO A., MASLOV V., 2019, The magnitude and nature of the shadow economy in Ukrainian border regions, in: *Financial and credit activities: problems of theory and practice*, 4(31), p. 394-401.
28. VONDROVA Z., VENERT T., GINYA G., DUDEU R. et al., 2019, *The experience of transformation of mining regions: recommendations for Ukraine*, <https://ecoaction.org.ua/wp-content/uploads/2019/06/transformation-experiences-ua-full.pdf> (01.04.2020).