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Anna JANKOWSKA-KŁAPKOWSKA*, Paweł JANKOWSKI**

The efficiency of the changes in energy policy structures in Poland

KEY WORDS: energetic industry, economy, energy policy, coal industry

The attempts taken in Poland in order to assess the efficiency of changes in the energy policy structures, give results susceptible to various interpretations. This is due, among others, to the adoption of a variety of criteria in the assessments made. They lack of an integrated presentation of effectiveness in the categories of sustainable development. What is the cause of this situation?

Most generally, it can be brought down to two problems:

1) lack of full identification of sustainable development process, despite the already large number of literature on the subject. There is however, concordance as to the general feature of this development, stressing that balance is to be kept among the three systems: economic, social and natural;

2) lack in the theory of sustainable development of the application part concerning the total and segment's implementation of this process, with often considerably detailed specification of some of its categories and standards.

The starting point of the identification is to consider sustainable development as a category characteristic for the functioning of large economic and ecological systems. The stability and

* The University of Information Technology and Management in Rzeszów, Poland.
** Executive MBA University of Maryland / Uniwersytet Łódzki, Poland.

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balance coded in it should be treated as the condition of the systems at which changes of their inner structures do not lead to the system disintegration. With such general formulation of the essence of this process, it may be stated that the notion of sustainable development has been overused. It has turned into a useful catchword in the scenarios for the development of micro — subjects, among others: companies, respective economic sectors or micro — regions. The phenomena occurring in the microeconomic subjects who offer a synergistic effect of sustainable development as a macro-economic process are hardly emphasised.

Similarly, the application, implementation part of the theory of sustainable development is a collision of the adopted scenarios of the national economic development with the scenarios of development for subsystems of varying scale, which constitute the subject structure of this economy. The core of such collision is the differences in direct objectives and in the dissimilarity of the phenomena specifying constituent stability and balance characteristic for micro — subjects. They may lead to difficulties in parallel maintenance of balance among the three large systems: economic, social and ecological.

One of the factors in adjusting the development scenarios for respective subsystems to the scenarios of sustainable national development is the question to what degree the changes in the structures of these subsystems affect the quality of life of the country population. Depending on the information's capacity of a given standard it can be assumed that the influence of a micro — system affects the three basic segments specifying the quality of living. The first is connected with the traditional material consumption standards, the second with specifying the effect of changes in the natural environment on human biological condition and stability of natural systems, and the third is a system of values dominant in a given society.

Adopting the quality of living as a reference point, there has been made an attempt to signal the criteria for the effectiveness of structure changes in the energy management in Poland, which should be found in the assessment of the scenarios of these changes. The criteria are connected with:

1) effective use of the production factors, which put into practice the principle of saving resources that constitutes a significant feature of all variants of conserver society;

2) keeping adequate proportions in the branch structures, that is introducing such structural changes and directions in utilising the obtained products, that do not activate mechanisms of "production for production " but increase the final product;

3) actual use, in the restructured economy, the technologies neutralising the negative influence of this economy on the natural environment;

4) specifying the influence of the market economy in the discussed sectors on free choice of economic solutions, optimisation of the social cost of their functioning and realisation of at least some elements of the pursued system of values.

All the mentioned here effectiveness areas, determine the direct or indirect influence of structural changes on the extension of the material base enabling improvement of the traditional factors of material consumption over short and long time periods. The third element of this assessment signals the effect of structural changes on ecological balance and the related biological human condition. The fourth element determines the influence of the analysed structural changes, mostly on economic freedom, security feeling, and the need of social responsibility.

The assessment covers two segments of energy management: hard coal industry, dominating in the Polish energy balance and electrical power engineering industry involving production, processing, transmission and sale of electric power and heat.

One of the structural changes that has bee given particular attention since the beginning of the nineties is the change of ownership structures and the related change of object structures resulting from organisational transformations within the sectors intended for privatisation. The possibility of privatising coal-mining industry coincides in time with the electric power engineering industry privatisation projects. The initiation of this process was signalled by three documents issued by the government: two concerning coal mining reforms issued at the end of the 20th century and one specifying the strategy of privatisation of this industry for the beginning of the 21st century [8,11]. This does not mean however, that coal-mining industry did not go through structural changes in the nineties. These were mostly the changes connected with its commercialisation. Did it put into practice the principle of saving resources? The answer is no. This was determined both by objective conditions, often lying outside the discussed sector, but also the internal conditions of this industry searching for its own ways of restructuring. Until this day no assessment has been made of the effect on resource allocation of such phenomena as:

- withdrawal of some mines from full utilisation of the mined deposits and shifting mining activities to the most effective deposit lots in order to achieve better financial result;
- undervaluing the capital return connected with the fixed assets of the liquidated mines, which has been often very far not only from complete "technical death" but also from obsolescence.
- failure to take in the existing mines of larger scale attempts at synchronising the production capacity of the respective elements of fixed assets, which could reduce the extent to which it is not utilised;
- under negative financial results of many subjects in this industry, no larger scale projects protecting against negative effect on the environment were possible. The situation may be exemplified by water salinity of the Vistula River caused by mine waters. This made the external costs of such activity goes up, violating the rule "the polluter pays."
- the results of restructuring are not yet fully assessed as to the management of the most mobile and valuable production factor that is the manpower and working resources. Connecting these results solely with the increasing unemployment caused by employment reduction in coal mining industry seems to be a simplification. Not only do they influence partial demand-supply balance on the labour market, but they also apply to many other processes taking place in economic and social systems; for instance, to the growing deep diversification of income of various groups within the mining industry. This gives rise to social tensions, especially in the situations when as the result of organisational changes in this sector a small group of people receiving considerable salaries is created, even though there is a lack of economic balance in the subordinate units. Another example can be underestimation of the social costs of severance payments system, which in many cases offered them short — term increase in current consumption, without strong motivation to create foundations of future consumption.

Focusing on adverse phenomena which appeared at the initial phase of restructuring the coal industry is treated in terms of a warning and does not eliminate the positive changes in its functioning that occurred in the result of restructuring.

Basing on the resource saving criteria, the assessment should present to what degree the resource consumption of both industries has been reduced as the effect of the structural changes carried out and how much it can be affected by further restructuring of the analysed industries. It should be stressed that this element of the assessment is connected with determining resource consumption of branches and not resource consumption of the products made by them. In the first case we also deal with valuation of losses resulting from inadequate use of all production factors constituting the resources of the studied subsystems.

The second criterion of the effectiveness of structural changes is the participation of both branches in making intermediate and final products. Even if we assume that due to their functions in the national economy these are branches operating to a large extent for the needs of production and not direct consumption, the experience of socialist economy revealed, the phenomenon of growing disproportion between "production for production" including internal consumption and the final product, which was disturbing for the economic system balance.

The assessment of the effectiveness of structural changes in both discussed branches of industry would require current analysis (based on the inter-branch flow method) of the effect the occurring changes have on the position of these branches in the production of intermediate and final products. The participation index of both industries in the production of gross or net national product that has been used up till now in assessments is not a sufficient information carrier.

The third criterion in the suggested assessment is the capacity of the restructured branches to absorb modern technologies neutralising the negative influence of both subsystems on the natural environment. As relates to coal mining sector, this is primarily the evaluation as to what extent its financial condition enables the implementation of such project. Economy transformation preferring economic criteria to increase its competitiveness forced coal mining to accept technological and technical changes causing cost reduction of coal mining and adjustment of its quality to the customers` needs. In this respect considerable success has been achieved [12].

There are, however, weaker chances for introducing technical and technological solutions oriented directly on environmental protection. Within the frame of the assessed costs of the mining reform amounting to 15 milliard PLN, the sum closely connected with the environmental protection is 168 million PLN for removing mining damage. This is the smallest constituent of the total cost. The largest is the amortisation of a part of the mining industry's debt amount 7500 million PLN.

In comparison to the situation of coal mining industry electric power engineering has a better financial condition; nevertheless it is a fact that the financial balances of all the subjects of the electric power-engineering sector are deteriorating, which is a negative phenomena. This makes the process of modernisation more difficult, also when taking into consideration increasing the reduction of pollutant emissions. Investment expenditures are not sufficient to adjust electric power stations to the standards concerning environment protection established by the European Union. During the negotiations with the European Union we postulated for vesting Poland with 14 transition stage periods of a different status in the environment protection field, taking into consideration, among others, the possibilities to run activities in this field by the producers of electric and heating power [2].

The application of the technologies relatively neutral to the environment would result in the increase in the share of the renewable sources of energy in the country's energy balance. This is

imposed by one of the directives issued by the European Union, which estimates that the share of these sources is to reach 12% by the year 2010. The Ministry of Economics has assessed that this share in our conditions would be a little higher than 6%.

The fourth criteria of the effectiveness of the processes of restructuring the analysed subsystems is the assessment of how will incorporating coal mining industry and electric power engineering into market economy influence the following: the freedom to chose economic solutions, optimisation the social cost of their functioning, realisation of the free competition standards formulated by the European Union, the scope of state intervention as to erasing market loses, and the changes occurring in the systems of values.

Hitherto existing changes in the structures of the coal mining industry have not led to full marketable of this industry, especially in the light of the standards set up by the single European Union market. It would be hazardous for this branch to shift it to the position of a traditional branch that is still receiving subventions and working for the internal market in the situation when it would not be competitive on the international market.

Power industry is also not fully marketable. The marketable is estimated in the assessments of energy policy. They are subject to correction mainly from the point of view of the current socio-political and external conditions related mostly to Poland's accession to the European Union [6].

Treating the previously formulated important feature of the stable and balanced development as the aim to achieve an internal balance of the three systems: economic, social and natural, and thus starting from macroeconomic forecasts are fully justifiable. This applies to, among others, balancing energy demands in the scope of the three macroeconomic development scenarios characterised by the annual average GNP growth rate, as well as by qualitative descriptions of the conditions and constraints of the external and internal environment. The following assumptions have been accepted as the conditions: capital access on the international markets, transfer of modern technologies, increase in the importance of the sectors of high added value, increase in work efficiency. It can be stated that the estimated balances of fuels and energy cover the demand resulting from the development scenario — with the annual average GNP growth rate of 5.5%, the application scenario - the annual average GNP growth rate of 4%, and survival scenario — the annual average GNP growth rate of 2.3%. However, when the basic macroeconomic indexes are not achieved already in the year 2001, this signals the overcapacity of coal mining industry as well as in almost all sub — sectors of power engineering in relation to the demand for hard coal and energy. Taking into consideration the problem of synchronising the dimensions of the engaged production factors, it becomes clear that in the energy sector there is a lack of such synchronisation between the installed capacity and the size of the employment. Over — employment is estimated to be over 30% [7]. This is a considerable problem, because in the variants of energy sector development both, in the so called basis variant and in the efficiency variant it is estimated that by the year 2005 there will be a decline in the demand for final energy (e.g. approximately 8% in the efficiency variant). The declines are likely to occur especially in the industry and households. In the latest, it will be connected with the constraint of energy saving and with wider and wider implementation of thermo modernisation of buildings [3].

The Ministry of Economics ranks the social-political expectations of Energy security of the country among the current conditions inherent not only in the economic system but also the social one. In the short and long-term assessments it is not assumed to violate this safety. As the aims,

socially assessed as important, connected with the government's activity the following factors have been adopted:

- creating a balanced structure of the fuels market and the development of the renewable energy sources, including bio — fuels;
- increasing the efficiency of fuels and energy consumption leading to, at least, the decrease of the unitary energy consumption and lowering the costs of obtaining energy;
- introducing such legal and economic instruments that would enable incorporating this sector to the energy market of the European Union without infringement the interests of the local receivers or the state's ones. It has been estimated that the conditions of two sectors: electrical power engineering and gas engineering will be subject to the most drastic changes.

In the "Government's Economic Strategy" [10], in the programmes of restructuring the discussed energy economy sectors, there are presented at least a few aims which can influence the stable, balanced national economy development.

In the mining industry they are connected, among others, with such aims as:

- obtaining profitability and reducing financial liabilities of this sector also in relation to the state, which would have influence on the budgetary balance;
- target increasing the regularity of paying ecological charges;
- lessening the hitherto existing and planned employment restructuring.

In electrical power engineering the aims are connected with:

- obtaining a stable level of the prices of energy, which would be attractive for the national economy and competitive on foreign markets;
- trying to achieve principal return of invested capital in this sector. In the strategies the methods according to which the capital valuation is to be made are not defined.

The changes of the organisational structures are estimated to take place till the year 2003, however without any considerable ownership changes [14].

The electrical power-engineering sector belonging to the Treasury is subject to restructuring and consolidation. There are two ideas concerning the consolidation, in both of them horizontal connections dominate, their aim is economic reinforcement of the subjects belonging to electrical engineering sector and distinguishing its segments: a system operator, the industry sub — sector, production sub — sector (3—5 companies), energy exchange, distribution sub — sector (6—8 companies), and turnover sub — sector (32 companies).

In comparison to the present situation 3 stages of the privatisation of coal mining industry are planned [14].

Stage I — the Ministry of Economics carries out further restructuring of the employment and mining efficiency, the debts restructuring is going on, actions aiming at the reduction of environment pollution are carried out in the field of environment protection, coal mining plants are to regulate current ecological charges.

Stages II — the regulating mechanisms for the private sector of the industry are to be established by the government. The Ministry of Treasury is to sell at least the majority interests. The ministry of Economics is to liquidate the coal mines which are not being privatised, it also takes responsibility for the health liabilities for the miners working in the coal mines that are liquidated, as well as those which are privatised if this is stated in the contracts of sale. According to these contracts, it takes responsibility for future ecological liabilities, not adapted by the new owners.

Stage III — it is estimated that the remaining interests are to be sold by the Ministry of Treasury. The government ceases to be the owner, however it still retains some regulating and administrative functions. They are not related to coal prices regulation

In the electrical power engineering four stages of consolidation and privatisation are planned.

Stage I — mostly the already mentioned processes of consolidation and reorganisation of the hitherto existing segments of the electrical power-engineering sector constitute this.

Stage II — the Treasury sells at least the majority interests of the companies engaged in this activity however, the electrical energy turnover is licensed.

Stage III — the mechanisms promoting competition in the energy production sector are initiated as well as the mechanisms connected with market limitations (long-term contracts of the sale of energy, environmental costs). The Treasury wholly withdraws from the transmission sector by selling the interests. The regulating role of the state is related to introducing the limitation that an individual investor cannot control more than 20% of the electric market; the energy industry is licensed. The commercial activity connected with turnover shall be open to competition and the participation of the private sector.

Stage IV — the Treasury totally withdraws from the electrical energy production segment. There follows the privatisation of the company belonging to the transmission operator; the state can still regulate and control it's activity.

The assumptions of Poland's energy policy till the year 2020 are in consistent with the undertakings of the European Union described in a document entitled "An Energy Policy for the European Union — White Paper". The cases of calculating prices, or of eliminating the dominant position of the consolidated economic subjects on the energy market are less clear.

The effectiveness assessment of the planned changes in the ownership and subject structures by adapting the above formulated criteria resulting from the demands of sustainable development would be at the present stage premature. The assumptions of the energy policy, determining further processes of the restructuring the two branches of industry do not precise many problems important for such assessment. For instance, what can be the role in these processes of a foreign capital? It is particularly interested in the consolidation of the subjects of the electrical power-engineering sector. In such conditions the statement that the consolidation aims to achieve capital accumulation enabling the creation of the subjects, which can be competitors to foreign subjects, is ambiguous. This is due to the fact that this is the accumulation not only of a national capital. It is sufficient to trace the contracts of sale of power plants producing heat and energy or only energy which have concluded since the year 1997 with big concerns as well as with French, German, Swedish, British and Belgian holdings [9]. The problem of regionalisation of energy policy has not been specified yet. The development of the electric power-engineering sector is connected with two processes: the process of globalisation [1,4,13] and the process of regionalisation [5], which is often stressed in various discussions.

Many subjects of the electric power engineering are inclined towards the project of regionalisation of the energy policy. The efficiency assessment of the structural changes would require in this conditions preparing not one but a few possible scenarios of the further development of the hard coal mining industry and electric power engineering, complying to the requirements of the stable and balanced development of national economy.

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Abstract

The attempts at efficiency estimation in changes of energy management in Poland give different results. The origin of this ambiguity is an application of different criteria of analyses. They conceive of no efficiency in the categories essential for the future of economic systems, that is in categories of sustainable development.

In the article such an attempt has been undertaken. The analyses embrace two sectors of energy policy — the hard coal industry dominating in Polish energy balance, considering exhaustible energy resources and electro-energetic industry encompassing manufacturing, processing, transport and sale of electrical and heat energy.

The subject of analyses is:

1. The influence of changes of ownership, the organisational and agent structures of the above--mentioned branches of economy on production factors effective from the point of view of sustainable development.

2. Answering the question if these changes will lead to marketing the economy in accordance with the EU standards and if the direction of the marketing gives a profitable set of sustainable development conditions.

3. Presentation of which links and dependencies come into being between the above- mentioned fields of economy as a result of the changes occurring in their structure.

Anna JANKOWSKA-KŁAPKOWSKA, Paweł JANKOWSKI

Efektywność zmian strukturalnych w polityce energetycznej w Polsce

SŁOWA KLUCZOWE: przemysł energetyczny, gospodarka, polityka energetyczna, przemysł węglowy

Streszczenie

Wysiłki zmierzające do określenia efektywności zmian w zarządzaniu energią prowadzą do różnych wyników. Przyczyną tych niejednoznaczności jest zastosowanie do analizy różnych kryteriów. Zakładają one brak efektywności w kategoriach zasadniczych dla przyszłości systemów ekonomicznych, to jest w kategoriach zrównoważonego rozwoju.

W artykule podjęto taką próbę. Analiza obejmuje dwa sektory polityki energetycznej — przemysł węgla kamiennego, który dominuje w bilansie energetycznym w Polsce i jest surowcem sczerpywalnym oraz przemysł elektroenergetyczny, na który składają się wytwarzanie, przetwarzanie, przesył i sprzedaż energii elektrycznej i ciepła.

Przedmiotem analizy jest:

1. Wpływ zmian własnościowych, organizacyjnych i strukturalnych wyżej wymienionych branż gospodarki na wskaźniki produkcyjne istotne z punktu widzenia zrównoważonego rozwoju.

2. Odpowiedź na pytanie, czy te zmiany będą prowadzić do zarządzania gospodarką w sposób zgodny ze standardami Unii Europejskiej oraz czy ten kierunek zarządzania pozwoli na powstanie efektywnego zestawu warunków gwarantujących zrównoważony rozwój.

3. Przedstawienie, jakie powiązania i zależności powstaną pomiędzy tymi działami gospodarki w wyniku ich zmian strukturalnych.