

MODERN APPROACHES TO IMPROVING MECHANISMS OF ELECTRIC POWER INDUSTRY DEVELOPMENT

Abstract. The paper investigates scientific foundations and practical importance of improving the mechanisms of state regulation of the electric power industry of Ukraine as a natural monopoly. The author offers a solution of the task of identifying the functional characteristics of natural monopolies as market structures, identifies key approaches to improve the mechanisms of state regulation of electric power producing industrial enterprises as natural monopolies, provides an analysis of institutional and legal framework of their management, and clarifies the main contradictions of their demonopolization. The work analyzes the essential features of natural monopolies and defines conceptual approaches to business transformation of natural monopolies.

Keywords: state regulation of natural monopolies, fuel and energy complex, demonopolization, strategic development, transformation.

Background research

The development of market economy reforms in Ukraine reinforces monopolistic tendencies resulting from the law of profit maximization. Competition that ensures dominant position of certain economic entities in the market together with concentration of production act as the driving force. The development of electric power industry in Ukraine is quite contradictory, inconsistent and is accompanied by increased risks for state governance, business and civil society. In general, electric power producing industry in Ukraine develops by inertia, and being not reinforced with the necessary investments, it retains its management and tariff principles inherited from the past. Progressive development of the industry is stifled by imperfect legislation that does not meet modern requirements.

At the same time, taking into account the European aspirations of Ukraine, its state regulation of natural monopolies (NM) and the quality of their services to population and other entities must comply with applicable European standards regarding tariff policy, service levels, safety, environmental protection and so on. All

these facts call for structural changes in the electric power industry sector. Given its strategic importance, the goal of reform is to bring the industry into line to ensure sustainable development of country's economy as well as its social sector.

Features and peculiarities of reforming the electricity sector are explored by the following scientists: C. Arinin, V. Barinov, E. Volkov, D. Volfberg, V. Zolotukhin, L. Eremin, J. Keith, G. Kovalev, V. Kotler, J. McKenzie, G. Martirosyan, and in Ukraine by V. Baryakhtar, A. Biryukov, A. Bittner, A. Bondarenko, E. Borschuk, M. Virchenko, V. Kukhar, O. Kucherenko, S. Nalyvaychenko, G. Palshyn, I. Plachkov, V. Saprykin, P. Sereda, V. Shevchenko, A. Shidlovskii, A. Chemerys and others. According to the results of their research it can be asserted that the effectiveness of state regulation of electric power industry is largely determined by the structure of the industry and competition forms.

Elaboration of new approaches to the development of electric power industry has been performed by V. Alekseev, V. Brych, Ya. Hirnyak, A. Deineka, I. Diyak, L. Dmytrychenko, S. Zaitsev, S. Kiselyova, H. Liuta, N. Maystrenko, E. Perminov, M. Rustamov, A. Slobodyanyuk, I. Chukaeva; whereas O. Hudyma, O. Zolotaryova, H. Kozoriz, M. Kovalko, A. Kryvolapova, B. Kuzmenko, Yu. Shyshenin and others who have contributed to solving problems of energy security and energy efficiency.

However, there are still insufficiently developed the issues of working out the strategy of Ukrainian energy sector reforms related to the division of a single economic system into separate independent companies, followed by their privatization, introduction of competition between these enterprises and their transfer to sustainable development mode through competition, rational combination of market forces and government regulation.

The purpose and objectives of the study.

The goal is scientific substantiation of effective mechanisms of enhancing competition among the electric power industry sector natural monopoly enterprises and their development on this basis.

Main material presentation

Modern electric power industry of Ukraine is mainly based on the energy sector created during the intensive industrialization of the former Soviet Union economy. Ukraine inherited such shortcomings of the economy as the excessive centralization of management, some waste of natural resources, and inability to meet the requirements of market economy [1].

Today, natural monopolies in the electric power industry sector of Ukraine function on the basis of pure monopoly and imperfect competition as recurrence of the planned and directive-based economy of the past. However, natural monopoly characteristics are typical for only one activity, it being the transmission of electricity. It is considered that this particular natural monopoly sector, namely local power grids, exists because the construction and operation of these grids that are going to duplicate the existing ones, creates an extremely high price burden due to lack of competition mechanisms and rather ineffective regulation of monopolies [2].

Natural monopolies (NMs) are economic entities (legal persons, certain groups of individuals, industries, government etc.) that have the exclusive right to manage rare production resources, including non-renewable resources, as well as the right to conduct manufacturing, trade, commerce and other activities. In this case, the economy of scale in production and distribution of products is achieved through extensive activities and provides the lowest cost per unit of output. This effect of scale, mobilization of significant resources to maintain the proper level of production, ensuring product and services quality that meet the requirements of common standards as well as the ability to reduce the costs associated with risks and uncertainty are positive characteristics of natural monopolies.

The basis of social and economic policy by which the state can assess the effect of economic growth and the development of organizations is the level of the country's population welfare. The industries that belong to NMs and other related spheres (production and distribution of electricity, gas and water supply, transport and communica-

tions) account for a significant share of Ukrainian GDP. Half of the GDP produced by NMs goes to compensation of their employees [3, 4].

So in Ukraine monopolies make a significant contribution to the country's GDP, ensuring the competitiveness of the national economy. Monopolies often use new and more advanced forms and methods of management in order not to weaken their competitive advantage. World's leading economists consider a free competition market which works effectively without state intervention to be the most efficient economic environment.

However, while investigating the theory of competition and the theory of various industrial markets, economists have concluded that there are conditions (causes) in which the competition is unable to effectively regulate certain markets and then there emerges the need for government intervention. Two situations are most often described as the ones in which the competition is unable to effectively regulate the market. In particular, the following reasons are highlighted by V. Kip Viskuzi [5], who proves that in terms of normative analysis under certain conditions unlimited competition does not work effectively enough and the two most important examples of such conditions are a natural monopoly and the work in the environment complicated by external effects.

The negative side of natural monopolies is the uncontrolled growth of tariffs, which can be limited by the state regulatory policy. The ability of natural monopolies to inflate prices for their services deprives these companies of an incentive to reduce their costs through production modernization, introduction of new technologies and rationalization, and allows inefficient expenditures to be added to the cost of services. This causes inappropriate management leading to innovation restrictions, increased depreciation of fixed assets, including networks used to provide services. The latter is the main cause of the increasing number of accidents which, in turn, lowers the quality of services provided by natural monopolies and further increases their production cost (due to increased emergency response costs, in particular).

Thus, the main reason of the tariff increase in electric energy supply industry is inefficient management, which, in turn, is caused by cumbersome management schemes, depreciated and structurally inadequate physical infrastructure and means of logistics, lack of appropriate motivation and, as a consequence, lack of economic interest in improving performance at any economic level.

These factors cause high costs together with the need to compensate them through tariffs increase. This leads to untimely and partial payment of services by the population, who are often unable to pay because of the low standards of living in the country. Household income is the basis for improving the living standard, at the same time acting as a source of investments in the improvement and development of production for further growth of living standards. The main component of the national wealth continuous growth is improvement of the population living standards that is a guarantee of business entities development and accordingly increase of their income. The solution depends on whether social or economic approach is dominant.

The industry restructuring and reforming together with reorganizing the vertically integrated complex of Ukraine began with the adoption of the Decree of the President of Ukraine 282/95 "On Restructuring of the Electrical Power Sector of Ukraine" of 04.04.95. Since then the industry has gone through such stages as corporatization of companies, creation of a competitive environment, formation of the wholesale market, and the abolition of tolling schemes and targeted supply. The creation of the wholesale electricity market made it possible to solve a number of strategic objectives for industry transition to market economy principles. However, the industry present state does not fully satisfy the growing needs of the society; there still exists the need to address such problems as the market demonopolization and improvement of the mechanism of state influence on reforming the industry.

To solve countless problems in this sphere is only possible through large-scale structural transformations using best international experience. But it requires proper adaptation to Ukrainian conditions, created mainly by its historical background. Ukraine is bound to benefit from implementation of highly successful foreign know-how and developments in the sphere of electric power industry such as non-discriminatory access to independent producers' transmission networks, the development of regional networks (US experience); organization of electricity trading exchanges, conclusion of futures and forward contracts, state priority to purchase shares from companies-owners of networks and enterprises, separation of vertically integrated electricity production and supply companies, creation of joint interstate electricity market (experience of the

Nordic countries), and liberalization of electric power industry on principles of a competitive sector (Kazakhstan).

Transformation of electric power natural monopoly enterprises and creation of an effective competitive market in the electric power industry of Ukraine is an extremely difficult and complex problem that requires consolidation of efforts of central and local authorities, particularly, the Ministry of Fuel and Energy of Ukraine, the National Electricity Regulatory Commission of Ukraine, "Ukrenergo" National Energy Company and independent power producers, as well as all possible support from all those involved in performing these complex tasks. Crucially important for success is creation of a legal and regulatory framework for implementing and managing the development and functioning of the United Energy System of Ukraine within the state strategic program of transformation and demonopolization of NM enterprises. While transforming NM enterprises it is necessary to consider the following features of the energy sector companies [6]:

- availability of sophisticated engineering and technological infrastructure that is placed in a particular area and territorial specificity of relations between stakeholders;

- natural monopolies' products and services (electric power) can not be stored and maintained, thus produced but not consumed electricity causes economic losses in business activities, and underproduction in one period cannot be compensated by overproduction during the other. This makes such product (service) a specific time sensitive good, therefore production and redistribution of such goods should be stable and predictable;

- in electric power production, unlike other natural monopolies (natural gas and water supply) there exists a rigid unified system of operational, including automatic, control of modes in a united power system where there is synchronization of operating modes between parallelly working consumer power stations and plants and where the emergency conditions affect the whole territory covered by the system very quickly. Thus ensuring reliable electric power supply is a priority economic task since emergency blackouts and interruptions in electricity supply of consumers lead to significant economic losses.

These features are crucial in analyzing the specific trends of transforming natural monopoly enterprises in the energy sector of Ukraine.

The 1976 Nobel Prize laureate in Economics M. Friedman shows in his studies that there is no reasonably ideal solution to the problem of so-called “technological monopoly”; there is only a choice out of three possible imperfect cases: a private unregulated monopoly, a state-regulated private monopoly, and direct economic activity of the state. However, globalization and the development of the market environment, the constant introduction of new technologies and development of new products, which consume electricity leaves no doubt about the need to develop the energy sector.

Transformation of monopoly companies and allocation of structural units able to operate in a competitive market, should be accompanied with streamlining business terms and rules of doing business in order to eliminate the risk of replacing one monopoly with another: a public monopoly with a private one [7, 8]. It is necessary to begin with the financial recovery of the existing monopoly companies' structural units, restoring order in their financial reporting and eliminating structural units engaged in non-core activities.

Assessment of possible reactions to such measures as reforming natural monopolies leads to innovative socially oriented type of economic development. Social responsibility of the state requires to put any monopolist in rigid limits, and the consumer will be satisfied. But to be led by the consumer desires and to determine extremely low prices and harsh working conditions for a monopolist are not an economically justifiable solutions either. First, any monopoly must evolve and modernize, and this requires long-term investments, and consumers are not interested in this in current economic conditions. On the other hand, having not made these investments now, tomorrow we will feel the shortage of goods and services produced by natural monopolies or their quality will be unacceptably low. The Energy Strategy of Ukraine for the period till 2035 states that overcoming the contradictions between providing social protection and introducing market principles of management in the energy sector requires modernization of social policy [9].

Thus, there exists a conflict between a natural monopoly authorities trying to modernize their subordinate branch and get significant income and the consumers who do not want to finance the sector at their own expense, while willing to obtain goods and services of high quality which meet international standards. All this leads to the

conclusion that, firstly, the regulation of natural monopolies is necessary and, secondly, the purpose of the regulator is to find a compromise between consumers and monopolies.

The primary task of transforming enterprises of energy sector should include:

- transparency of all kinds of economic activities of natural monopolies;
- preservation and development of a single electric power infrastructure, including backbone networks and supervisory control, improvement of operation sustainability, security and quality of service; development of electric power industry export potential;
- creation of the electricity market conditions, guided by the principles that preclude discrimination against any participant throughout Ukraine.

Based on the reality of existence of a two-level electricity market (wholesale and retail), it is possible to design transition stages from monopolistic to competitive market. Practice shows that competitive conditions are favorable for the spheres of production and supply. As for the areas of electricity transmission and distribution, it is expedient to preserve their monopoly and make them regulated by the state. The competitive sector of electric power requires adequate mechanisms that would combine long-term interests of the state and private business with market opportunities, its forms and rules, would ensure transparency, demopolization of the market, freedom of business, profitability, and less bureaucratic management. The sustained position of business entities in the markets, the level of their investment attractiveness to strategic partners and the degree of customer loyalty are largely determined by the state as a guarantor of creating competitive environment and favorable conditions for business and capital investments.

Thus, the problem of electric power enterprises monopoly is a result of insufficient legal regulation of this issue in the law of Ukraine “On Natural Monopolies”. Based on the above it can be stated that to ensure effective activity of natural monopolies in the electric power sector it is not enough to just form a competitive market. We consider it necessary to focus on the shift of emphasis in managing competitiveness of enterprises towards mega and macro factors, on the growing role of the state and supranational institutions in economic management, especially in terms of the global crisis expansion.

State regulation of the activities of the strategically important energy sector should be characterized by openness and accessibility of

information to the society that will make it possible to gain customers' support while establishing a sufficiently high level of prices (tariffs) to ensure profitability and, consequently, the investment development of the industry. For this purpose there must be created a national information system that would provide a common information base on financial and economic indicators of operational activities of the enterprises in the sector, the information being used for formation and implementation of decisions on regulation of natural monopolies based on actual results.

Conclusions

The research done has revealed the existence of unresolved problems in electric power industry of Ukraine and practical significance of further research into forming effective mechanism for managing development of natural monopolies. Efficiency of management depends on maturity of market economy and on consistency of state regulation, both being quite low in Ukraine. Foreign experience in electric power industry development indicates lack of common general approaches to the state governance of this natural monopoly. However, there is a certain set of different technologies, which ensure on the one hand the actual availability of goods and services provided by natural monopolies to consumers, and on the other hand efficient and profitable operation of natural monopolies.

Reforming electric power NMs is effective if there is a rational combination of market mechanisms and government regulation with the development of improved legal framework on electric power industry operation and development; there exists balance of interests of all electricity sector entities (producers and consumers, industries related to the energy sector, communities, regions, shareholders, owners and investors); geographical, economic, regional, cultural, historical and other features are considered in determining the timing and pace of their implementation at all stages of reforming the industry.

This study makes it possible to offer the improvement of mechanisms of developing electric power industry as a strategic economy sector, a natural monopoly in the market environment

transforming it by separating electricity transmission enterprises from electricity supply units. The separation will provide: potential buyers' access to the monopoly product in the market; prevention from any form of collusion between a seller and a buyer or a group of buyers; guarantee of exclusive information security, which could otherwise put part of customers in a privileged position; legally strengthened safeguards system and responsibility of a monopolist for the quality of its goods or services.

For the transformation to be a success, it is necessary to perform identification of economic physical and information entropy, as well as performance indicators based on actual data to resolve disagreements on priorities.

References

1. *Yakovlev A. Areas of the Electric Power Sector Development in Ukraine / A. Yakovlev, D. Drozhzhin // Bulletin of 'Kharkiv Polytechnic Institute' National Technical University : Coll. Science. Res. – Kharkiv: NTU “HPI”, 2005. – No. 34. – P. 165–168.*
2. *Rodrik D. Understanding Economic Policy Reform / D. Rodrik // Journal of Economic Literature, March 1996, Vol. 34, No. 1, P. 9–41.*
3. *On Natural Monopolies Law of Ukraine of 20.04.2000 № 1682-III. (www.rada.gov.ua)*
4. *Zielinska O. Features of the Operation and Regulation of Natural Monopolies / O. Zielinska // Bulletin of Lviv Commercial Academy. – Economic Series. – Issue 27 – Lviv: COOP Education, 2007. – P. 34–56.*
5. *Kip Viskuzi W. The Economic Theory of Regulation and Competition Policy / W. Kip Viskuzi. – K.: Salome Pavlychko “Basics” Publishers. – 2004. – P. 423–447.*
6. *Bazylevych V. Denationalization of Natural Monopolies in Ukraine / V. Bazylevych, H. Fylyuk // Economics of Ukraine. – 2002. – No. 3 – P. 35–42.*
7. *Brych B. Regulation of Natural Monopoly Enterprises in Terms of Cooperation Between Ukraine and the European Energy Community / B. Brych, M. Fedirko // Bulletin of TNEU. – 2013. – Vol. 3. – P. 23–26.*
8. *Methods of Utility Company Risk Management, Monographs. Ed. Doctor of Economics, Professor. V. Brych. – Ternopil: TNEU, 2013. – 306 p.*
9. *Energy Policy of Ukraine White Book “Security and Competitiveness” (Energy Strategy of Ukraine till 2035): [electronic resource] / National Institute for Strategic Studies under the President of Ukraine. – Kyiv. – 2014 – Access: http://www.niss.gov.ua/public/File/2014_nauk_an_rozrobku/Energy_Strategy_2035.pdf*