

DOI : 10.14746/pped.2015.3.11  
УДК 351.824.11

Volodymyr Yevdokimov,  
postgraduate student,  
National University of Civil Protection of Ukraine,  
Kharkiv

## PERSPECTIVES OF FORMATION OF MECHANISMS OF GOVERNMENT CONTROL OF ELECTRIC POWER ENGINEERING IN UKRAINE

*The article offers the results of scientific investigation of the features of legal and organizational mechanisms of state regulation of electric power engineering. It was determined that the key elements of the organizational mechanism of state control of the development of the electric power branch are the subjects and the objects of the state influence. The grounds for the implementation of this mechanism consist of methods and means of legal mechanism of state control of the development of the electric power branch. It was proposed to understand the electric power industry, an object of the state administration, as a branch of economy, the purpose of which is to regularly provide customers with electric power in necessary amount and at well-grounded prices. It (the branch) is formed by certain sub-branches, in particular, heat-, water-, and nuclear power industry, as well as electric power stations, energy generating, energy supply and energy transmission companies. This definition of the electric power industry as an object of the state administration should be legislatively determined, mainly, in the Law of Ukraine "On electric power industry". It also presents perspectives of formation of legal and organizational mechanisms of government control of electric power engineering in Ukraine, in particular main organizational tasks for said industry reforming.*

**Keywords:** *mechanism of government regulation, electric power engineering, reform.*

**Jewdokimow W.A. Perspektywy powstawania mechanizmów regulacji państwa rozwoju elektryczno-energetycznego obszaru na Ukrainie.**

*W artykule przedstawiono wyniki badań naukowych dotyczących specyfiki mechanizmów prawnych i organizacyjnych państwowej regulacji sektora elektryczno-energetycznego na Ukrainie. Bezsporne jest, że kluczowe elementy mechanizmu instytucjonalnego państwowej regulacji sektora elektryczno-energetycznego są podmioty i przedmioty oddziaływania państwa.*

*Podstawą dla realizacji tego mechanizmu są metody i środki mechanizmu prawnego regulacji państwa rozwoju branży elektryczno-energetycznej.*

*Określono perspektywę poprawy procesu tworzenia mechanizmów prawnych i organizacyjnych państwowej regulacji sektora elektryczno-energetycznego na Ukrainie (na przykład podstawowe zadania organizacyjne reformowania branży).*

**Słowa kluczowe:** mechanizmy regulacji państwa, obszar elektryczno-energetyczny, reformowanie.

**Євдокімов В.А. Перспективи формування механізмів державного регулювання розвитку електроенергетичної галузі в Україні**

*У статті подано результати наукового дослідження особливостей правового й організаційного механізмів державного регулювання розвитком електроенергетичної галузі в Україні. Установлено, що ключовими елементами організаційного механізму державного регулювання розвитку електроенергетичної галузі є суб'єкти й об'єкти державного впливу. Підґрунтя для реалізації цього механізму становлять методи та засоби правового механізму державного регулювання розвитку електроенергетичної галузі. Виявлено перспективи вдосконалення процесу формування правового й організаційного механізмів державного регулювання розвитком електроенергетичної галузі в Україні, зокрема основні організаційні завдання реформування цієї галузі.*

**Ключові слова:** механізми державного регулювання, електроенергетична галузь, реформування.

**Евдокимов В.А. Перспективы формирования механизмов государственного регулирования развития электроэнергетической отрасли в Украине**

*В статье изложены результаты научного исследования особенностей правового и организационного механизмов государственного регулирования развития электроэнергетической отрасли в Украине. Установлено, что ключевыми элементами организационного механизма государственного регулирования развития электроэнергетической отрасли являются субъекты и объекты государственного влияния. Основу для реализации этого механизма составляют методы и способы правового механизма государственного регулирования развития электроэнергетической отрасли. Обозначены перспективы усовершенствования процесса формирования правового и организационного механизмов государственного регулирования развития электроэнергетической отрасли в Украине, в частности основные организационные задания реформирования этой отрасли.*

**Ключевые слова:** механизмы государственного регулирования, электроэнергетическая отрасль, реформирование.

## **Introduction**

Investigations of legal and organizational mechanisms of government control become more important under reforming of the electric power engineering. These mechanisms, like others, are a form of functionality of the governmental system. Despite the fact that the system includes subjects, objects, facilities, methods, functions, etc., the specified mechanisms are also marked by their totality. The legal and organizational mechanisms of government control of the electric power engineering have several economic and social tasks of importance and relevance. This way, the significance and actuality of determination of the current state of actions of legal and organizational mechanisms of electric power engineering government control to the above-mentioned theory structure makes no doubt.

## **Analysis of recent research**

The questions covering aspects of state administrative aspects of the energy management, involved A. Dyehtyar, B. Kal'chenko, S. Maystro, V. Shvedun and others. However, today there is a lack of development in the determination of perspectives of formation of mechanisms of government control of electric power engineering in Ukraine.

## **Statement of research objectives**

The purpose of the article is the research of the perspectives of formation of mechanisms of government control of electric power engineering in Ukraine.

## **Results**

The key elements of the organizational mechanism of government control are subjects and objects of the government influence. Organizational mechanism of government control of the electric power engineering is not exclusion- it represents a structure of organizational system of government control of electricity power engineering. The system provides internal ordering and coordinated cooperation of subjects and objects of the government influence. It also provides proper distribution and consistent implementation of the government functions, providing resources as well as their rational and efficient usage. At this, the background for implementation of organizational mechanism of government control of this sector is methods and legal facilities of government control of the electric power engineering.

In science, "Government control" is a generally accepted identification of an object of government control (regulation) with relations, events, and processes focused on immediate regulatory impact of government control subject. According to the most acceptable approach, the objects of government control are separate areas of society, economy sectors and fields, including electricity. As it is known, the sub-sectors of the latter are thermal, hydro and atomic power engineering.

We agree with O. Hubriyenko [1, p. 19] that "electric power engineering" is a multidimensional term, as can be considered in legal, technical, social and

economic context. However, under the legal framework analysis we can argue as of discrepancy in the definition of electric power engineering as an object of government control and the electric power engineering object itself (see. The Law of Ukraine “About the electric power engineering”). An electric power object includes: an electric power station (but for the nuclear part of atomic electric power station), electric substation, electric power network which are connected to the United Energy System of Ukraine, boiler houses, connected to the main heating system, and the main heating system.

The electric power engineering, as an object of government control, has signs as follows:

- it is a sector of Ukrainian economy and a part of the fuel and energy sector;
- it is of strategic importance both for the country in whole and for its economic and social system;
- it is directly connected with other sectors of the economy;
- it requires development and implementation of a special mechanism of government control, including principles, subjects, functions, forms, methods and other elements.

The electric power engineering as the object of government control can be characterized with underdevelopment or acceleration of its development through absence / presence of all the required laws and regulations. A social aspect has great impact on electric power engineering, which should be considered together with the economic one. Significant and unfounded domination of a social aspect over the economic one can slow down development of the electric power engineering, which can be confirmed with the presence of cross-subsidization.

Considering this, we offer understanding of electric power engineering as an object of government control, as the economic sector, designed for permanent and sufficient supply of consumers with electricity at reasonable price. This branch consists of thermal, hydro and atomic power engineering, as well as electric power stations, companies for power generation and distribution. We consider that determination of electric power engineering as an object of government control should be legally entered to the Law of Ukraine “About the Electric Power engineering” [7, cl. 1].

Now, development of electric power engineering, as an object of government control in Ukraine, covers reforming of functioning of the specified branch. However, under completion of reforming of electric power engineering, its functioning should be treated as the process, characterized by positive dynamics, in other words- the development of this branch.

It was determined that the main organizational tasks for Ukraine’s electric power industry reforming are the following ones:

- creation of conditions for the guarantee of the long-term development of the electric power branch by eliminating the energy resources shortfall risks;
- creation of competitive electric power markets in all regions of Ukraine;
- removal of excessive wearing of facilities and energy infrastructure objects, their modernization according to the modern criteria, and attraction of means necessary for this purpose;
- creation of effective mechanism of expenditure cut in the area of production (generation), transmission and distribution of electric power, and the improvement of the financial condition of organization in the branch;
- stimulation of energy-saving in all areas and branches of economy, in particular in the electric power one;
- creation of favorable conditions for the construction and operation of new facilities for production (generation) and transmission of electric power;
- preservation and development of the single infrastructure of the electric power industry, including transmission networks and supervisory control;
- demonopolization of fuel market for heat power plants;
- creation of regulatory and legal framework for the electric power branch reforming, controlling its functioning in new economic conditions;
- reforming of the system of state regulation and control in the electric power branch;
- fulfillment of export potential of the electric power industry;
- removal of cross-subsidization of certain categories of customers at the expense of others, etc.

Scientists consider that expectations of electric power engineering reforming in Ukraine include: enabling development of competitive environment in the branch of electric power, which, in its turn, will become a factor, inducing enterprises to improve their work, procurement and implementation of high technologies, will contribute to development of energy-saving programs and approval of reasonable retail electricity rates [2; 3; 11, p. 136; 12].

State reforming of electric power engineering in Ukraine is also intended to get the mobilization effect as of optimization of this branch. On one hand, it will provide the most effective enterprises of this industry with orders and less effective ones will have to improve their management in electric power engineering; on the other hand – it will build intra-branch bridges, making the structure of Ukrainian energetic power engineering more mobile.

The government spreads its influence over operation of the wholesale electricity market. The main subject of realization of government control is the National Commission, managing energy and community facilities, which have replaced the National Energy Regulation Commission in year 2014 [6]. The new state agency can perform licensing and control of natural monopolies, make rules of electricity use, protect the rights of consumers, including implementa-

tion of the price and rate [there as well]. Consumers of electricity will pay the minimum price available at: firstly - competition between generating companies and suppliers of this type of energy, secondly - financial stability and profitability of electric power engineering, and thirdly - creation of terms for attraction of investments.

National wholesale electricity market operates under the “single buyer” model. It has been chosen considering a model of significant advantages, used in the United Kingdom, Wales and Argentina. The structure of energy facilities of the specified states is similar to Ukrainian. Understanding that, in year 2002, the Government of Ukraine of that time made a decision about further functioning and development of the wholesale electricity market in the form of appropriate Concept [9]. The approved Concept contained provisions, determining the need for stepwise change of “single buyer” model for “the full-scale competitive market of electric power”. The latter covers the following markets:

- market of bilateral contracts;
- balancing market to provide supply and demand for outside contractual volumes of electrical energy;
- market of additional services.

In 2004, a vector of deregulation of electric energy market was departed due to establishment of a government monopoly - Company «Energy Company of Ukraine» [10]. It combined the assets of energy generating and distributing companies of Ukraine. It contributed to misbalance of the market structure - de facto there was formed a vertically integrated structure, which was a monopolist in diversified activities in the electric energy sector on the one hand, and interconnected - on the other hand. Until year 2008, “Energy Company of Ukraine” National joint stock Company had a control packet of shares of 10 electricity-generating facilities. According to S. Yermilov, they had almost half of the total installed capacity of the United Energy System of Ukraine, and the state share of 21 of 27 regional power distribution companies, buying about 70% of electricity on the wholesale electricity market [4]. However, the Government Decree of year 2014 liquidated “Energy Company of Ukraine” National Joint Stock Company [8].

Under annex 2 of the analyzed Government Decree [8] the state-owned shares of joint-stock companies were transferred to the Ministry of Energy and Coal Industry of Ukraine after the liquidation of “Energy Company of Ukraine” National Joint Stock Company. They included 78.29% of shares of “Centrenergo” PJSC, 87.4% of shares of “Dniester PSPP” PJSC and 60.06% of shares of “Luganskoblenergo” OJSC. We agree with A. Shevtsov, M. Zemlyanyi and others, that the government should define the companies to be left at own disposal, to guarantee stability of electric power engineering branch, the strategy of its development and the required level of energy security [12].

Ukraine still has several problems at reforming of the electric power engineering branch. They include selection of a supplier by consumers, widespread introduction of competitive pricing, energy security (reliability of electricity supply, availability of energy reserves, no background for development of monopoly in the electricity markets, etc.). One of the reasons for enhancing and accumulation of problems in the electric power engineering branch is the global financial and economic crisis. The national electric power engineering has features, representing a real threat to the economic security of Ukraine:

- reduction of energy carriers output (certain grade of coal in Donetsk and Lugansk regions);
- bureaucracy in providing of electric power engineering branch with the raw materials, required for generation of electric power;
- slow retooling in the branch, and even impossibility to make it, due to insufficient funding;
- reduction of innovative technologies applied, resulting in increase of GDP energy intensity, caused by inconsistency in implementation of government energy saving policy;
- increase of arrears in payments for energy consumed.

“Energy Market” State Enterprise (hereinafter - “Energy Market” SE) [5], as a wholesale supplier, has purchased 166 billion kWh of electricity from producing companies, for a total amount of 111.3 billion UAH (excluding VAT) in year 2014. The share of generating companies, selling electricity to “Energy Market” State Enterprise by “green” tariff, increased from 0.9 to 1.2% in the overall structure of the sale of electricity on the wholesale electricity market, compared to year 2013.

In year 2014, 161.6 billion kWh of electricity were purchased in the Wholesale Electricity Market, which is for 6% less than in year 2013. Electric energy, procured by suppliers for Ukrainian consumers, decreased by 5.6% and amounted to 152.4 billion kWh, taking into account the supplies to the temporarily occupied territory of the Crimea and Sevastopol.

The average wholesale market price for electricity in year 2014 increased by 13.7 % and amounted to 830 UAH for 1MWh, compared to year 2013.

The average electricity price was 521.8 UAH per 1MWh at generating companies in year 2014. The price increased by 12.9 %, compared to year 2013. Increase of electricity purchase price occurred in all generating companies.

The average electricity suppliers selling price was increased by 12.8 % and amounted to 577.3 UAH for 1MWh considering exports in year 2014 and compared to year 2013.

“Energy Market” State Enterprise was taking all measures to ensure full payments for electricity with the generating companies and NPC “Ukrenergo” State Enterprise, in association with the Council of electricity wholesale market,

Department of Energy and coal industry of Ukraine and the National Commission for regulation in the areas of energy and utilities, in year 2014.

“Energy Market” State Enterprise has also additionally attracted 2 billion UAH with the Government order for electricity debt repayment in year 2014 to generating companies of thermal power plants. It has been done for further directing of funds to payment for coal for thermal stations, but for the ones located in the areas of anti-terrorist operation.

In year 2014, “Energy Market” State Enterprise attracted credit resources for a total amount of 11.3 billion UAH under applications of generating companies, and further to decrees of the National Commission for energy and utilities control, 8.9 billion UAH of which was returned in year 2014. 582.7 million UAH interest on credit resources was paid in due time [the same place].

However, “Energy Market” State Enterprise managed to settle 92.2 % of the payments with generating companies and “Ukrenergo” NPC, despite irregular and incomplete payments by electricity suppliers (but for suppliers at unregulated tariffs) for commodity products, in year 2014. In year 2013, 98.3 % of payments were settled. In year 2014, “Energy Market” State Enterprise paid almost 3 billion UAH of duty to the general fund of the state budget, in the form of surcharge to the current electric and thermal energy rate.

In year 2014, payments of suppliers for electricity from “Energy Market” State Enterprise amounted to 93.4 % of the cost of commodity products. This is for 4.2% less than during the same period of year 2013. At this, in year 2014, the level of current payments to the suppliers at a regulated tariff decreased by 6.9 % and amounted to 91.1% of the cost of commodity products, compared to year 2013.

Only 14 of 37 suppliers of electricity at a regulated tariff completed their settlements with the wholesale supplier of electric energy (“Energy Market” State Enterprise), against 19 suppliers of electricity at a regulated tariff in year 2013[5].

Incidentally, in year 2001, the common level of payments to energy suppliers for purchased electricity amounted to 64.8% of the cost of commodity products; in year 2002, this figure was increased to 82.4%, in year 2003 - 90.8%, in year 2004 - 96.6%. In the following years, these inflows were growing and in year 2007 became almost 100%. In year 2008, the payments to suppliers of purchased electricity were lower due to the global financial and economic crisis.

In year 2014, “Energy Market” State Enterprise has short received 7.4 billion UAH, which is 3.9 billion UAH more than last year. It should also be noted that over 80% of this debt, which is 6 billion UAH, lie on 5 companies, which are: “Dniprooblenergo”, “Donetskoblenergo”, “LEO”, “REM” and “PES Energovugillya” [the same place].

It should be noted that one of the main reasons for significant deterioration of settlements with these supplying companies are the events in the area of ATO

and incomplete payments of companies of coal industry, housing and communal services. Undoubtedly, the reason for increase of debt for electricity, purchased on the wholesale electricity market, is incomplete settlements of consumers and suppliers.

The above problems are partially caused by impossibility of investments in electric power engineering through its system and short-term investments in the private sector of electric power engineering. As of the latter, investors are interested in fast money and are focused on short-term prospect in development of electric power engineering. Large investments in development of innovative technologies of medium and long payback are complicated now. It is known that encouragement of investments is less efficient at long payback periods, typical for electric power engineering. Another issue of electric power engineering development is obsolete national legislation and sometimes instability thereof, as of the energy saving. Considering this, lack of assurance that potential investors will seek for long-term investments is logical and objective.

#### Conclusions

Taking into account the current results of the analysis of organizational and legal mechanisms of government regulation of the electric power engineering in Ukraine, the following prospects can be determined:

- preservation of composition of primary energy resources for electricity production with a small change in their structure (it should be remembered that the structure of electricity generation does not meet international trends, because the sources of primary energy contain a hypertrophied part of natural gas, coal, and the share of alternative sources is lowered as of today);
- the need for further integration with the energy systems of EU countries;
- strengthening of processes of energy supply autorotation and others.

This shows importance of further improving of the existing mechanisms of government control in electric power engineering, promoting creation of innovative, energy-efficient technologies and their implementation in electric power engineering as well as search for alternative energy sources.

A negative issue of the national practice of reforming of the electric power engineering is indistinctness of transformations in the beginning of reforming. This is caused by the lack of experience of such reforms. Therefore, the main sources of electricity branch transformation, which have replaced this experience, are formally declared aims and tools of electric energy markets transformation, the main of which is liberalization (privatization). We think that a methodical mistake was made during liberalization in Ukraine, sometimes privatization was carried out without sufficient scientific or theoretical justification. It resulted in misbalance of interests of subjects of the electricity sector. In this context, we must point out the similarity of the results of national reforms in the study branch, with the actual achievements in the reforming of electricity system

in England, where sometimes, after the beginning of a reform, the government has to intervene in the electricity sector, by changing approaches to reforming.

Based on the above, we can say that at propagation of the doctrine of free market, at liberalization of the economy, if this doctrine shows its inability to resolve a set of problems independently, the state is the only participant in the managing process, ready to take on not only the authority but also responsibility for the crisis. This evidences the theoretical and practical need in a balanced government control of development of the electric power system of Ukraine. It has a task to ground the feasibility of intervention in the electric power engineering.

## References

1. Hubriyenko O. M. Organizatsiyno-pravovi zasady derzhavnogo upravlinnya v galuzi elektroenergetyky v Ukraini (The organizational and legal principles of state administration in the electricity sector in Ukraine), Abstract of Ph.D. dissertation, National state academy of tax service, Irpin`, Ukraine, 2006
2. Derzkyi V. G., Mozenkov O. V. Analiz efektyvnosti funktsionirovaniya optovogo rynku elektroenerghii (An analysis of the functioning of the wholesale electricity market), *Energetika ta elektryfikaciia*, 2008, vol. 5, pp. 7–13.
3. Dovgal'ova O. V. Derzhavne reguluvannya elektroenergetychnoi galuzi Ukrainy (State regulation of electricity branch), *Derzhava ta regiony. Seriia: Derzhavne upravlinnia*, 2009, vol. 3, pp. 33–37.
4. Yermilov S. Formuvannya konkurentnykh energorynkiv v Ukraini (Formation of competitive energy markets in Ukraine), *Ekonomika Ukrainy*, 2007, vol. 10, pp. 15–29.
5. Official web-site of the State Enterprise “Energy Market” [Electronic resource], Access mode: [http://www.er.gov.ua/data/zvit\\_dyrektor\\_dpe.pdf](http://www.er.gov.ua/data/zvit_dyrektor_dpe.pdf).
6. Official web-site of the National energy and utilities regulatory commission [Electronic resource], Access mode: <http://www.nerc.gov.ua/>.
7. The Verkhovna Rada of Ukraine (1997), The Law of Ukraine “On electric power” from October, 16th, 1997, [Electronic resource], Access mode: <http://zakon2.rada.gov.ua/laws/show/575/97-%D0%B2%D1%80>.
8. Cabinet of Ministers of Ukraine (2014), Resolution of the Cabinet of Ministers of Ukraine “On liquidation of National joint-stock society “Energy Company of Ukraine”” from September, 3th, 2014, [Electronic resource], Access mode: <http://zakon2.rada.gov.ua/laws/show/398-2014-%D0%BF>.
9. Cabinet of Ministers of Ukraine (2002), Resolution of the Cabinet of Ministers of Ukraine “On approval of the Concept of functioning and development of the wholesale electricity market of Ukraine ” from November, 16th, 2002, [Electronic resource], Access mode: <http://zakon4.rada.gov.ua/laws/show/1789-2002-%D0%BF>.

10. Cabinet of Ministers of Ukraine (2004), Resolution of the Cabinet of Ministers of Ukraine “On establishment of National joint-stock society “Energy Company of Ukraine”” from June, 22th, 2004, [Electronic resource], Access mode: <http://zakon4.rada.gov.ua/laws/show/794-2004-%D0%BF>.

11. Strel'bitska N. Y., Liberalizatsiya optovogo rynku elektroenergetiki Ukrainy: pershi naslidky (The liberalization of the wholesale electricity market of Ukraine: first effects), *Biznes Inform*, 2014, vol. 4, pp. 136–139.

12. Shevtsov A., M. Zemlyanyi M., Verbytskyi V., Rynok elektroenergii v Ukraini: problemy vdoskonalennya (Electricity market in Ukraine: problems of improvement), [Electronic resource], Access mode: <http://www.niss.gov.ua/Monitor/april08/14.htm>.

---

---

**Section 3.**  
**INTERNATIONAL COOPERATION**

---

---