

## **WAYS OF GUARANTEEING ENERGY SECURITY IN UKRAINE**

**Setting the problem.** Proactive development of energy and transport complexes should be in industrially developed countries to ensure economic growth. Functioning of all elements of society life depends on the guaranteed ensuring its energy resources. That is why energy security is one of the most important components of the economic security of any country. Due to this fact finding ways to guarantee energy security of our country is a very actual task.

**Analysis of recent research and publications.** The works of such scientists as Heyts V., Mazaraki A., Evtushevskiy V., Yermilov S., Pabat A., Loyko V., Fedorova V. And others were problem devoted to the problem of studying factors that affect energy security. However, some elements that affect energy security were highlighted in the works. This factor makes it necessary deeper study of the main directions that provide a solution to the problems of energy security in Ukraine.

**Setting the objective.** The aim of the article is to conduct the analysis of energy security in Ukraine, its problems and outline ways of guaranteeing sustainable economic development.

**The main material of the research.** Energy security is an important component of the economic and national security because it is necessary condition for the existence and development of our country. There is no uniform approach to the definition of the concept “energy security” at present. Analyzing various references [1-6], where is given the definition of the term “energy security”, we can conclude that energy security is state's ability to provide the most reliable, technically safe, environmentally acceptable and reasonable energy supply for economy and population, and also the formation and implementation of the state policy to protect

national interests in energy sphere without excessive external and internal pressures in the current and projected conditions.

Energy security is such condition of protected branches of the national economy and the population, which prevents of threats concerning reliable supply of fuel and energy resources. Estimation of the state and level of energy security should be implemented through a number of indicators, such as: energy supply, energy dependence, economic acceptability and social stability. Analysis of the parameters that characterize the state and the level of energy security in Ukraine indicate about low energy efficiency of the national economy, which is a serious threat to the economic security of the state. This threat is caused by the influence of factors that inhibit the development of the fuel and energy complex. Among a number factors are those that relate exclusively the energy complex and others – describe the impact of multi-level macro-environment [1-3].

The main factors that caused critical energy security must include:

- deficit of investments in all sectors of fuel and energy complex;
- excessive politicization of energy sphere;
- imperfection of price, tax and tariff policy of the state in the energy industry;
- unformation of the competitive energy market and the appropriate market infrastructure;
- monopolistic formation of prices for energy carriers and determine the conditions of their supply by Russia;
- deformation of the structure for production and energy consumption;
- crisis in the management of strategic reserves of energy resources;
- progressive lagging of raw material base of extractive industries of the fuel and energy complex, including gas and oil.

Elimination of disproportions and problems in fuel and energy complex of the country requires the development of balanced and effective policy on energy security, which should include [4; 5]:

- development and implementation of a transparent and effective legal and regulatory framework functioning of all branches of power engineering that provides for regulation, coordination and control over the activity of state energy systems, nuclear power and natural monopolies;
- guarantee and control by the state authorities and local self-government on a reliable energy supply for all sectors of the economy and the population in its entirety;
- creation of economic conditions for ensuring energy supply to domestic and foreign markets;
- effective management of strategic reserves of energy resources that includes: diversification of energy sources, prevention of energy waste, coordination of consumption of exhaustible resource with the pace of development of renewable energy sources, increase the share of nuclear and hydro power in the overall balance of fuel and energy resources, checking quality and ecological security of mineral deposits in compliance with the law and international standards;
- implementation of investment policies in the national energy sector that provides modernization of outdated technological base of fuel and energy complex, expansion of infrastructure for scientific, engineering and technical support and exploitation accompaniment of complex equipment in energy sector;
- establishment of technical regulations and development of standards and norms of safety and efficiency of energy facilities and installations, as well as developing the mechanism of state supervision over their observance.

Thus, the inability of fuel and energy complex to meet the needs of national economy branches and population of the country in energy carriers, debts for consumed fuel and energy resources and the further accumulation of problems in the energy sector could undermine the foundations of energy security and worsen social stability in Ukraine. Despite this fact Ukraine has the ability to achieve a high level of energy security. It is necessary to carry out systematic and coordinated actions at all levels within the framework of balanced state energy policy and conducting energy saving measures should be a priority state task [7].

Considering the difficult current situation in the sphere of energy security, the process of improving state regulation of energy in Ukraine, as one of the main components of the national economy is very important. State regulation is identified with state management that has regulatory nature that is manifested in the presence of control functions, which is filled with organizing content. State regulation provides several versions for the future activity of managed objects, thus the possibility of effective activity is created [8].

State regulation is aimed at:

- satisfaction of social and public needs and interests;
- organization of joint activity and labor of people;
- implementation of the Constitution of Ukraine, legislative and normative legal acts;
- implementation of the basic state tasks, which are designed to protect the public interest, public benefit provision, maintenance of procedure and fulfill other general social problems.

In market conditions of managing the state regulation of power engineering is the system of typical measures of legislative, executive and supervisory nature. State regulation of power engineering as an important component of energy security in Ukraine is performed by independent state agencies within the existing legislation on social matters arising during the pleasure of energy interests between any entities in the state [9].

Improving government regulation can occur by two main directions. The first – is to improve the organizational structure and the functional content of state regulatory authorities of power engineering. The second – is the improvement of legal and regulatory framework of state regulation of power engineering. These directions allow you to balance the interests of producers and suppliers of fuel and energy resources, their customers and the state [8; 10].

State regulation in the energy sector requires improvement in each of the components of fuel and energy complex, including: electricity, nuclear power, oil and gas, coal mining, thermal power generation, renewable and alternative energy

sources. State regulation has its own meaning, methods and purpose of influence in each of these components.

A striking example of the improvement of state regulation of energy is the enactment the Decree of the President of Ukraine “Concept of improving state regulation of natural monopolies”. Natural monopolies is considered as “state of the commodity market, where meeting the demand on this market is more efficient in the absence of competition due to technological features of production (due to a significant decrease in production costs per unit with output growth) and products (services) that are produced by natural monopolies can not be substituted in the consumption of other goods (services) as the demand for this commodity market is less dependent on changes in the prices for these goods (services) than demand for other goods (services)”.

The concept is aimed at ensuring the protection of competition in business by the state, abuse of monopolistic market position are not allowed, the unlawful restriction of competition and unfair competition. The concept identifies problems and solutions in the field of natural monopolies and this applies to energy, because the most of its components are natural monopolies. It should be noted that the provisions set out in the Concept solve the problems of state regulation of power engineering only partially, and this worsens the condition of energy security in Ukraine.

However, these tasks impossible to fulfill without addressing such issues as licensing. State regulation in the energy sector is done by issuing licenses to operate in the production, transmission and supply of electricity, combined heat and power generation, heat energy production in thermal power plants and installations with the use of non-traditional or renewable sources of energy. The procedure for issuing licenses should be clearly regulated by legislative acts, transparent and predictable to avoid the negative practice of preconceived issuing licenses. State influence and control over the activity of natural monopolies and adjacent markets will be provided only in this case [8].

The important means of government regulation in the fuel and energy complex is the tariff formation. The aim of state regulation of tariffs in the electricity sector are: to protect consumers from overvaluation of electricity and create the mechanism of optimal value of economic interest on the part of electrical energy, and from electricity consumers to ensure competitiveness of products and the level of social protection [8].

The union of two activities – power transmission to the local networks and energy supply by single entity, leading to cross-subsidization of one activity by the other and to the non-transparent tariff formation of these activities is in Ukrainian power engineering today.

Tariffs shall be generated for any and all power supply companies not on the principle of expense and profit that encourages economic entities to increase spending to raise profits and does not contain incentives to invest and apply them to the mechanism with the establishment of the rate of return on the investments and automatic tariff adjustment when changing inflationary factors, and it would reduce operating costs [8].

It was noted by the European Parliament Directive concerning common rules for the internal market in electricity that the distribution system or energy transfer must be operated by separate legal entities that have vertically integrated enterprises. Application of such mechanism would provide a competitive environment for the delivery of electricity that will lead to the decrease of electricity tariffs and will help implement transparent tariff policy enterprises that transmit electricity by local networks [11].

At the same time, with the improvement of the state electricity regulatory it is necessary to resolve issues of raising electricity tariffs for all consumer categories. It should be mentioned that tariffs for household consumers in countries with market economy higher doubled (and in some countries - three times) than those for industrial and other consumers. There is no cross-subsidization.

Social protection of population with low incomes provided by the following sources: targeted state aid from public energy funds that are formed from the proceeds of fines or other sources [8].

For effective implementation of state energy policy and the improvement of public relations in the energy sector and to ensure national energy security is necessary to develop a concept for improving state regulation of energy that should be the basis of a consistent and systematic improvement of state regulation of energy in Ukraine and at the same time an important link in the process of ensuring energy security in the country.

One of the directions of increasing energy security is cooperation between Ukraine and the European Union, as it is a key transit country in the supply of hydrocarbons to European countries. On the European markets through the territory of Ukraine is about 80% of Russian gas and 17% of oil [12], because our country is an important partner for the EU in ensuring a safe, transparent and reliable transit of energy resources. The EU countries economy strongly depends on a stable supply of energy resources from Russia and Central Asia, at the same time, how clear and comfortable for users will become transit energy infrastructure of our country.

Distribution of European energy standards in Ukrainian legislation allows significantly increase resistance to attempts of Ukraine to politicize bilateral relations in the energy sector, and its accession to the European market will reduce the opacity of the gas market. Ukraine has signed and ratified the Energy Charter. This allows our country to have access to the open energy markets in the EU, and the ability to solve current and future energy supply issues [12].

The main directions of the energy policy in Ukraine agreed with EU energy policy should be:

- introduction of economically substantiated energy needs with maximum reduction in energy intensity of the national product;
- ensuring a high level of safety and environmental acceptability of energy productions;

- improving production efficiency, transmission and distribution of electric and thermal energy, energy conservation in all sectors of the national economy;
- reducing dependency of the Ukrainian economy on imported energy resources;
- optimization of energy balances and increasing the share of renewable energy sources in total energy consumption;
- modernization of the energy production in order to ensure its competitiveness;
- ensuring energy security of Ukraine.

The main factors that inhibit the process of creating a framework for the European integration of Ukraine include: inadequate level of economic development, lack of basic institutions of the economy and the slow pace of reforms and imperfect, vague and unstable economic legislation that creates a high level of corruption, vices tax policy, tariff restrictions in trade with the EU countries, debt problems and problems with the protection of intellectual property. In the electricity sector Ukraine has developed energy complex for the production and supply of electricity, which is included in the unified energy system of Ukraine. The energy system has significant capacities that are used for own needs and export excess of electricity and is connected with power systems of the Central and Southern Europe. Wholesale electricity market operates with mechanisms of economic regulation. There is a tendency of growth of Ukrainian electricity exports to the EU countries.

Ukraine has developed network of trunk pipelines with underground gas storages in the oil and gas industry. This can be used for the transit of oil and natural gas from the Caspian region and Central Asia to the EU countries. Ukraine also has a fairly strong oil refining industry. Prospected reserves of natural gas and oil are able to increase the share of personal fuel in the energy balance of the country in the future, and this is consistent with the principles of the Energy Charter Treaty of the European Union, because it reduces the country's dependence on energy imports [13].

A range of measures to bring prices into line with the level of costs and attract the necessary investment should be the priority. This requires appropriate legislative



amendments and regulatory framework that will integrate natural gas markets with different pricing policy (for the population, municipal heat energy, industry) and set a single domestic price. This corresponds to the European practice. Such changes will facilitate the establishment of transparent and competitive pricing, which will lead to economical and efficient use of energy.

Ukraine should insist on signing an extended agreement with the European Union which will become the basis for further cooperation and promote integration into the EU countries and extended contacts in the field of energy. The expansion of cooperation between Ukraine and the European Union in the framework of the “Eastern Partnership” is promising.

Ukraine should be presented with new initiatives to ensure collective energy security of Europe, namely:

- opportunity to use alternative energy sources in any period;
- structure of energy consumption should be determined according to the economic and environmental expediency;
- energy production and consumption should be decentralized and energy flows – crushed;
- formation of strategic reserves should be universal;
- to improve the flexibility and stability of power systems must be allocated or created backup power capacity.

**Conclusions from the study.** Thus, energy security is one of the major problems, whose solution will ensure sustainable economic development in Ukraine and in the EU countries. The main directions of this problem are: reduction of energy dependence, increasing energy efficiency, ensuring the protection of environment and social sustainability.

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#### **Дзядикевич Ю.В. ШЛЯХИ ГАРАНТУВАННЯ ЕНЕРГЕТИЧНОЇ БЕЗПЕКИ УКРАЇНИ**

**Мета.** Проведення аналізу стану енергетичної безпеки України, її проблем і окреслення шляхів гарантування стійкого розвитку економіки.

**Методика дослідження.** В процесі дослідження використовувались загальні та спеціальні методи. На основі аналізу та синтезу, індукції та дедукції, а також узагальнення наукових джерел, присвячених проблемі вирішення енергетичної безпеки України, досліджено основні напрями, які гарантують енергетичну безпеку України.

**Результати.** Проведено аналіз стану енергетичної безпеки України та виявлено її проблеми. Встановлено низку чинників, які гальмують розвиток паливно-енергетичного комплексу, внаслідок чого виник критичний стан енергетичної безпеки. Виявлено необхідність вирішення таких питань, як ліцензування, тарифоутворення, а також розробки концепції вдосконалення державного регулювання енергетики. Показано, що одним із напрямів гарантування енергетичної безпеки є співпраця України з країнами ЄС. Це сприятиме зниженню енергетичної залежності, підвищенню енергетичної ефективності, забезпеченню охорони довкілля та соціальної стабільності.

**Наукова новизна.** На підставі аналізу стану енергетичної безпеки України та виявлених проблем запропоновано оптимальні шляхи, що гарантують стійкий розвиток економіки, а саме: державне регулювання енергетики та співпраця України з ЄС.

**Практична значущість.** Одержані результати дослідження дають можливість сформулювати перспективні шляхи покращення енергетичної безпеки України, які можуть бути використані на підприємствах паливно-енергетичного комплексу країни.

**Ключові слова:** енергетична безпека, державне регулювання, ціноутворення, тариф, конкуренція, енергетична політика, співпраця, енергоспоживання.

#### **Дзядыкевич Ю.В. ПУТИ ОБЕСПЕЧЕНИЯ ЭНЕРГЕТИЧЕСКОЙ БЕЗОПАСНОСТИ УКРАИНЫ**

**Цель.** Проведение анализа состояния энергетической безопасности Украины, ее проблем и определение путей обеспечения устойчивого развития экономики.

**Методика исследования.** В процессе исследования использовались общие и специальные методы. На основе анализа и синтеза, индукции и дедукции, а также обобщение научных источников, посвященных проблеме решения энергетической безопасности Украины, исследованы основные направления, которые гарантируют энергетическую безопасность Украины.

**Результаты.** Проведен анализ состояния энергетической безопасности Украины и выявлены ее проблемы. Установлен ряд факторов, которые тормозят развитие топливно-энергетического комплекса, в результате чего возникло критическое состояние энергетической безопасности. Выявлена необходимость решения таких вопросов, как лицензирование, тарифообразование, а также разработки концепции совершенствования государственного регулирования энергетики. Показано, что одним из направлений

обеспечения энергетической безопасности является сотрудничество Украины со странами ЕС. Это будет способствовать снижению энергетической зависимости, повышению энергетической эффективности, обеспечению охраны окружающей среды и социальной стабильности.

**Научная новизна.** На основании анализа состояния энергетической безопасности Украины и выявленных проблем предложены оптимальные пути, обеспечивающие устойчивое развитие экономики.

**Практическая ценность.** Полученные результаты исследования дают возможность сформулировать перспективные пути улучшения энергетической безопасности Украины, которые могут быть использованы на предприятиях топливно-энергетического комплекса страны.

**Ключевые слова:** энергетическая безопасность, государственное регулирование, ценообразование, тариф, конкуренция, энергетическая политика, сотрудничество, энергопотребление.

#### **Dziadykevych Yu.V. WAYS OF GUARANTEEING ENERGY SECURITY IN UKRAINE**

**Purpose.** The aim of the article is to conduct the analysis of energy security in Ukraine, its problems and outline ways of guaranteeing sustainable economic development.

**Methodology of the study.** The general and special methods were used in the process of research. The basic directions have been studied on the basis of analysis and synthesis, induction and deduction and also generalization of scientific sources devoted to the problem of resolving energy security in Ukraine. These directions guarantee energy security in Ukraine.

**Findings.** The analysis of energy security in Ukraine has been conducted and its problems have been identified. It has been established a number of factors that inhibit the development of fuel and energy complex, so that there was a critical state of energy security. It has been detected the need to solve such issues as licensing, tariff formation and also developing the concept of improving state regulation of energy. It has been shown that one of the guarantee directions for energy security is cooperation Ukraine with countries of European Union. It will help to reduce energy dependence, improve energy efficiency, ensuring environmental and social sustainability.

**Originality.** The optimal ways that guarantee sustainable development of the economy were proposed on the basis of analysis of energy security in Ukraine and identified problems. Among them are: state regulation of energy and cooperation between Ukraine and the European Union.

**Practical value.** The obtained results of the study provide an opportunity to formulate perspective ways of improving energy security in Ukraine, which can be used at the enterprises of fuel and energy complex.

**Key words:** energy security, state regulation, pricing, tariffs, competition, energy policy, cooperation, energy consumption.