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PROBLEMS OF ECONOMIC SECURITY OF THE FUEL AND ENERGY RESOURCES OF THE COUNTRY

Abstract. The view is growing that unilateral actions by energy security, and in general, economic security, can lead - and in the absence of appropriate coordination and consistency, as practice shows, often lead to trans border transfer of economic shocks and various kinds of "external shocks", and ultimately - to interstate, including military-political conflicts. In other words, real unilateral national energy security is impossible. The problems of energy conservation today are most acute in all countries of the world. Effective use of energy can reduce its consumption and improve the energy security of the state. Improving energy efficiency and implementing energy saving measures is one of the guarantees of the state's energy security. When deciding on the issues of determining financial investments for energy conservation, an individual approach to each facility is necessary. Knowledge of the priority tasks to reduce energy consumption, financial costs for energy resources, obtained on the basis of detailed surveys with the development of the priority of financial investments, is an indispensable condition for a diligent attitude towards public funds allocated for energy conservation.

Key words : mineral raw materials, mineral resources, energy resources, material well-being, new technologies, power generation, power plants, efficiency, production capacity.

INTRODUCTION

It is advisable to represent the energy system as a set of energy objects using different energy sources. Next, determine the unit costs for the life cycle of each of these objects or for a set of objects, combined into a single functionally and technologically related energy subsystem. Accordingly, in the next investment cycle, it should be possible to invest in various energy subsystems.

Specific risks of the functioning of the energy system are presented in Table 1 .

Table 1 - Specific risks of the functioning of the energy system

Group of energy sources	Risk	Effects	Impact on the economy
Traditional sources of hydrocarbons	Reducing inventory and reducing the resource base	decrease in production volumes, lack of energy resources	The growth of energy prices, the restriction of economic growth
Unconventional sources of hydrocarbons	technical and technological problems associated with the impossibility of solving scientific research problems	low production volume, lack of energy resources	
Alternative renewable sources	technical and technological problems associated with the impossibility of solving scientific research problems	insufficiently generated energy, lack of energy resources	
Note - the source DV Kotov, "The Utility of Improving the Efficiency of the Fuel and Energy Complex in the Conditions of Development of Alternative Energy," in Economics and Management No. 1, 2014-12)			

When optimizing energy sources for the level of unit cost at certain time periods, one energy source will be used. The risks associated with the creation of an energy system using primarily one energy source may be significant, which means that the conditions for ensuring energy security will not be fulfilled, which will affect the cost of energy and the implementation of regional economic development programs [1].

Atomic energy complexes will allow optimal and balanced use of fuel and mineral resources available in the depths of our country, receiving cheap and environmentally friendly energy. It is clear that the events of 2011 in Japan have made some adjustments to the energy policy of a number of EU countries, and their plans to build nuclear power plants around the world are becoming more restrained [2].

The authorities of Japan, six months after the radiation leak at the Fukushima-1 nuclear power plant, decided to gradually abandon the use of nuclear power plants in the national energy sector, but it is not easy to find an alternative to nuclear power plants. Indeed, at present, the share of alternative energy sources (hydro, wind and solar energy) is about 1% of the total energy consumed in the world. For example, in the same Germany, where much attention is paid to the prospects for the development of alternative energy sources, they provide only 10% of the country's energy needs. In addition, the transition from traditional energy to alternative requires huge investments, and it is understandable that today, in the midst of the crisis of the euro zone and the impending threat of a second wave of the global recession, not all states can afford a broad gesture that sweeps away the already established energy channels.

At the same time, China, India, Russia, South Korea declares their readiness to actively develop nuclear power. Kazakhstan has a very high potential both in terms of development of solar, hydro- and wind energy, and in terms of nuclear power [3].

Despite the accident at the nuclear power plant (hereinafter - NPP) of Fukushima, the introduction of a significant number of new nuclear power plants and the growth of nuclear power generation are expected. The global demand for nuclear energy will continue to grow primarily at the expense of Asian countries. The main reduction in nuclear programs is planned in Europe and Japan. Until 2030, the number of nuclear reactors in the world will increase by 160 pieces (+ 35%), with the largest share of growth going to Asia - about 135 reactors (+ 115%). Thus, the global installed capacity of nuclear generation will grow by 55-60% by 2030 and amount to about 600 GW (generation in Asian countries will grow by 184%). The growth in the volume of nuclear generation will lead to an increase in demand for uranium by 50% by 2030 [4].

According to current projects, until 2020, world uranium supplies are expected to grow by 22%. The global uranium market is balancing on the brink of a deficit, a slight surplus was observed only in the last few years and was due to the impact of the accident at the Fukushima nuclear power plant. In the future, demand will recover and continue to grow, but there will be a local failure by the uranium supply as a result of the completion of the global disarmament program and a temporary reduction in investment in the development of new fields. In 2014, the program "Megatonsto Megawatts" (HEU-LEU) for processing the nuclear arsenal of the Russian Federation, which provided supplies of about 10 thousand tons of uranium equivalent per year. The end of supplies from disarmament will be partly offset by the supply of uranium from US state reserves, but the global supply of uranium will shorten in the short term. In addition, the decline in prices in the uranium market led to a temporary suspension of a number of projects to develop new fields. For example, in 2012 BHP Billiton abandoned the \$ 20 billion Olympic Dam development project, and the launch of Areva's large projects in Namibia and the CAR was postponed: Trekkopje and Bakouma [5].

The leaders of the industry in almost all areas are the French Areva and Russian Rosatom, offering their customers full cycle power plant services, including all fuel redistribution and spent fuel (contracts like Nuclear Steam Supply System - NSSS). USA, which includes all the redistributions of the cycle of uranium fuel production: from extraction to fabrication. GE-Hitachi and Cameco also seek to develop an enrichment segment in order to be able to offer a complete product on the market. It is also advisable to close the entire fuel chain (before the fuel assembly is fabricated), as this will provide domestic demand for intermediate conversion products (conversion, enrichment), the market for which is oversaturated. In

addition, the development of processing facilities for uranium will neutralize a significant volatility of the price of uranium on the world market. Uranium is a commodity (commodity) product, and futures for it are traded on the New York Stock Exchange. Since 2004, hedge funds and specialized traders (UPC, NUL and others) have formed a significant share of demand and supply, while price volatility has increased significantly due to speculative reaction to various events (the implementation of US state uranium reserves, the accident at the Fukushima nuclear power plant, financial crisis, etc.). At the same time, the cost of enriched uranium and fuel assemblies is formed on the basis of medium- and long-term contracts and is not subject to financial speculation.

In the past few years, the fuel and energy sector has shown a tendency to reduce the replenishment and quality of the resource base, which is reflected in the oil and gas, coal and nuclear industries. From the point of view of long-term development, this trend can lead to a significant drop in the level of mineral extraction and a decrease in export revenues for the state. To develop the resource base, it is necessary to attract significant investments in geological exploration activities, especially in the crude oil and uranium production segments [6].

One of the key tasks is to meet the growing needs of the state in electric and thermal energy and motor fuels. The growth of the economy and the population of the Republic of Kazakhstan will require the development of the electric power industry, and at the moment the country is not fully provided with high-quality gasoline, diesel fuel and commodity gas for the population. The preservation and enhancement of the energy security of the Republic of Kazakhstan is impossible without the creation of an appropriate infrastructure and the development of technologies.

Also, an important aspect of the functioning of the fuel and energy complex is environmental safety of the state, in particular, in the segments of oil and gas production and coal generation, as the main sources of environmental pollution, as well as within the planned nuclear power generation.

The long-term development goal of the fuel and energy complex is to increase the efficiency of energy resources use to promote economic growth and the quality of life of the population, as well as to strengthen foreign economic relations.

Strategic priorities for the development of the fuel and energy sector:

- 1) energy security;
- 2) development of resource base;
- 3) improvement of ecology.

The main tasks of the FEC:

- 1) modernization and construction of new assets in the generation and transmission of electricity and heat, refining;
- 2) development of domestic energy and fuel markets, consistent liberalization and development of competition;
- 3) intensification of geological exploration activities by attracting investments.
- 4) modernization of industry and transport, introduction of modern technologies to improve energy efficiency and reduce the negative impact on the environment.
- 5) development of technologies and infrastructure for the use of alternative energy sources: RES, nuclear power, associated gas processing, gas transportation, and coal-chemical production. [7]

In the 21st century, qualitative changes are taking place in the structure of world energy. Countries, especially developing ones, become the main dynamic factors that generate and close to themselves the main share and increase in consumption of energy resources.

According to E.A. Elibaeva, due to the large size of the territory and the uneven distribution of oil and gas resources, the solution of the energy security problems of many states combines the approaches typical for both importing countries and energy resource exporters [8].

There are several definitions of energy security. World Energy (MIREC) defines it as "the assurance that energy will be available in the quantity and quality that are required under given economic conditions." Published in 1985, the IEA "Energy policy in the field of technology - neologies" energy security was defined as "adequate energy supplies at a reasonable price". The European Commission (1990) provides a more complete definition: "security of supply means that it is essential

energy needs will be met Fascinated as due to the use of adequate domestic resources developed in an economically viable way or supported as a strategic reserve, and at the expense of affordable and stable external sources, supplemented if necessary by a strategic reserve".

Already in the mid-1970s, as the world community became increasingly aware of the degree of interdependence world and all the problems that exist in it, energy security has become is understood much broader than only as a process of ensuring the continuity of energy supply and achieving maximum "energy independence" [9].

This was emphasized by the experts of the Stockholm International Institute for Peace and Disarmament Research (SIPRI), expanding the concept of energy up to the concept of "between people's energy security, " and included in it the problems of fuel supply to not only developed but also developing oil-importing countries and other resources.

Difficulties in achieving international energy security, as well as a gradual transition to the creation of an alter native energy, that is, to the development of fundamentally new sources and technologies, the formation of energy-economic type of farming, the diversification of energy mix, -n apyamuyu linked with the situation on the oil market and its price. With increasing mutual no country in the world can, without prejudice to itself, remain in the external environment nomic self-isolation, especially exports tatting large volumes of energy carriers at highly volatile world market prices. Practically impossible long-term energy a strategic strategy that, firstly, does not have a corresponding system of rapid reaction to "external shocks" and, secondly, does not have broad coordination within the international community.

An analysis of such a complex phenomenon as between people's energy security, requires carrying out its structuring, building a " tree goals, "clarifying " dominant "problems, etc.

According to the Chinese analyst Zhao Daojin, energy security is not military guarantees, but is more connected with geopolitical factors and the national policy of countries that affect the control of energy resources and their transport beyond the limits of [10]. So, for example, the increasing year by year difference between internal security and consumption China's energy resources, forced the government to allocate energy security needs a number of basic national interests. At the state level, under the energy security the national security of the country, the state is of the population and the economy of the country from the threats of a deficit of economically accessible fuel and energy resources of acceptable quality and threats of violation of stable fuel and energy supply [11].

Accordingly, increasing energy efficiency, implementing energy saving measures is one of the guarantees of such security and, as a consequence, the most important resource for accelerating economic growth.

It should be noted that increasing energy efficiency in Kazakhstan and Russia as a whole is a big macroeconomic task, and the expected effect of its solution depends on involving the entire society in this process. And for this, first of all, a powerful state information system and creation of stimulating factors and favorable conditions for financial support of innovative energy saving developments from private capital are needed .

Practical implementation of the policy in the field of energy conservation, energy efficiency of the economy should be implemented on the basis of a comprehensive integrated approach to the problem. The main element in the scheme of organization of this work on the basis of this approach is the modern legislative, regulatory and regulatory framework that combines market and administrative norms for regulating relations, as well as government support and promotion of energy saving and energy efficiency .

Over the past few years, in Kazakhstan, the issue of improving energy efficiency and energy conservation has been given close attention. For the practical implementation of measures to improve energy efficiency and energy conservation in the Republic of Kazakhstan, a Comprehensive Plan to Improve Energy Efficiency in the Republic of Kazakhstan for 2012-2015 was implemented.

The list of technical solutions used to reduce energy costs includes the following:

- Optimization of the operation of plants generating thermal and electric energy to meet production needs;

- Constructing the energy balance of the process streams and energy, with a view to their most effective use;
- Solving problems increase efficiency of each particular installation, by replacing the heat exchangers and the use of secondary energy resources;
- Improving the production technology, by use of more efficient catalysts and advanced refining technologies;
- The use of flow analyzers that enable conducting the process in the most optimal conditions for a more economical separation of oil fractions from the rectification, reduction and catalytic cracking temperature reforming, hydrogen production optimization, olefins, methanol and other aromatic hydrocarbons [10].

The main criteria for the efficiency of a modern power plant are its production of energy per unit of fuel used while minimizing environmental pollution. Well-known is the fact that the efficiency of thermal power station is 25 to 50%, depending on fuel quality and completeness of combustion. In addition, the important factor is the accuracy of the compliance process, ensuring the longevity of the expensive equipment. To one of the main quality parameters of electricity production for the supervision of the chemical composition of the water, this is essential to ensure reliable operation of the steam turbine. Indicators of water quality are its acidity and salt content, content of dissolved oxygen, phosphorus, hydrazine, sodium, iron, silicon and other elements. Verification be supplied as a flow of water in boilers to produce steam and condensate obtained from the steam. To obtain reliable information comparable to laboratory results, it is necessary to maintain a constant temperature, flow and pressure of water, which is achieved by special air conditioning systems supplied with the analyzers and computer equipment as a single-key system.

CONCLUSION

Thus, the development of fuel and energy complex operation, including investment processes should not be considered in isolation from the general ideology that underlies the whole of economic reform. In other words, the country's economic policy goals should not be in contradiction with the objective tendencies of functioning and development of the energy sector. Kazakhstan retained interest in the possibilities of use of renewable energy sources are likely overall effect of their use in the medium term remain quite limited at much lower volumes than previously accepted target by 2030 Georgia (30% of electricity production from renewable sources, hydro and nuclear power plants). Current costs and problems of integration in the network of relatively large amounts of electricity, produced from renewable sources, it is possible to understand from the experience of other countries. Renewable energy sources in Kazakhstan are still in the early stages of implementation and are faced with similar challenges. Thus, given the presence in Kazakhstan large number of cheap coal complex and large coal fired power plants over the next two decades the country will largely rely on coal fuel, although over time the share of coal for generating electricity will gradually shrink. Based on the availability in Kazakhstan large number of cheap coal complex and large coal fired power plants over the next two decades the country will largely rely on coal fuel, although over time the share of coal for generating electricity will gradually shrink. Based on the availability in Kazakhstan large number of cheap coal complex and large coal fired power plants over the next two decades the country will largely rely on coal fuel, although over time the share of coal for generating electricity will gradually shrink.

REFERENCES

- [1] DV Kotov "P Uchi improve the efficiency of fuel and energy complex in the conditions of development of alternative energy" // Economics and Management №1, 2014 T12.

- [2] Korzhubaev AG Laws of the global Ener goobespecheniya and oil and gas policy of Russia // ECO. Novosibirsk, **2005**. S. 140-150.
- [3] Lyashok JA, Lyashok NY, Ascension VV The implementation of the energy and the concept ekologicheskoy security // Ed. Donetsk horn . and n-ta . **2002**. - S. 13-16.
- [4] R.R. Kenchibaev "Energy of the Republic of Kazakhstan and its export potential," Bulletin of the University , 2011. Karaganda.
- [5] Bityukov VA Energy-saving ventilation systems: monograph / VA Bityukov . - Kursk State Technical University, **2005**. 131 p.
- [6] Blokhin, AD The geopolitical situation in the Caspian skom regional energy security. // 18.12.2006 analitika.org/articles.php? story = 20061218020735996
- [7] E.A. Elibaeva "On the problem of the interpretation of the concept of energy security. Bulletin of the KNU , **2011**. .A lmaty "
- [8] Rams NN Non-traditional renewable sources and methods for the transformation of energy. M .: MEI Publishing, **2011**.
- [9] Voropai NI NI Pyatkova, Senderov SM, Slavin GB, MB Tcheltsov Russia's energy security in the context of globalization and liberalization of the world economy // Economy of the XXI Century: Terms of development, technology forecasts. Ans born in ed.N.I . Voropai - NEWS Birk: Science, **2004**. P. 135-147.
- [10] Liu Qian . Countries of the Shanghai organization of co -operation in China's energy / strategy Mosk . state . Univ them. M.V. Lomonosov. Econ. factor. 185 S.
- [11] Piebalgs A. Why Secure Energy Nosta is important for Europe and Eurasia // The per Concordiam. March, **2010**. number 1, Volume 1 - S.8-10

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ПРОБЛЕМЫ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ ТОПЛИВНО-ЭНЕРГЕТИЧЕСКИХ РЕСУРСОВ СТРАНЫ

Аннотация. Все больше распространяется мнение, что односторонние действия государств по обеспечению своей энергетической безопасности, а в целом и экономической безопасности, могут привести - и при отсутствии соответствующей координации и согласованности, как показывает практика, часто приводят - к трансграничной передаче экономических потрясений и различного рода "внешних шоков", а в конечном итоге - к межгосударственным, в т. ч. военно-политическим конфликтам. Иными словами, реальная односторонняя национальная энергетическая безопасность невозможна. Проблемы энергосбережения сегодня стоят наиболее остро во всех странах мира. Эффективное использование энергии позволяет сократить ее расход и повысить энергетическую безопасность государства. Повышение энергоэффективности и реализация мероприятий в области энергосбережения – одна из гарантий энергетической безопасности государства. При решении вопросов об определении финансовых вложений на цели энергосбережения необходим индивидуальный подход к каждому объекту. Знание первоочередных задач по снижению энергопотребления, финансовых затрат на энергоресурсы, получаемое на основе детальных обследований с выработкой очередности финансовых вложений неперемное условие рачительного отношения к государственным средствам, выделяемым на цели энергосбережения

Ключевые слова: минеральное сырье, минеральные ресурсы, энергетические ресурсы, материальное благосостояние, новые технологии, производство электроэнергии, электростанции, эффективность, мощность производства.

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