

Energy Measurement of the Safety as a Factor of Sustainable Development in the Republic of Kazakhstan

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ABSTRACT

Sustainable development is a mechanism that opens to Kazakhstan prospect of successful participation in the competition for the right to enter into the group of leader countries of world. In the 21st century, the energy complex of Kazakhstan may become a factor of economic, social, political stability and security in the region. This article discusses the geopolitical dimension of energy security of Kazakhstan. In the interests of its multi-vector energy policy Kazakhstan develops cooperation with Russia, China, the US, the EU and its neighbors in Central Asia. The geopolitical balance conservation with these players also impacts on future direction of development of the country's energy security policy.

KEYWORDS

Sustainable development, energy measurement, geopolitics, Central Asian relations

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Introduction

Sustainable development is a broad concept, including the concept of sustainable development linked to the modern strategy of social and economic development, ensuring sustainable economic growth and access to available resources.

Implementation of the Program of United Nations in the field of sustainable development "POST 2015", strategic global problems voiced in a speech on the anniversary of the United Nations Assembly by the President of the country Nazarbayev, adopted state programs, and the nation's plan "100 concrete steps" actualize the task of further study of the issues of development and address the problems of sustainable development in Kazakhstan.

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One of the objectives of United Nations Program in the field of sustainable development “POST 2015” is to ensure access to affordable, reliable, sustainable and modern energy for all.

In modern conditions, energy security is a priority in the system of national and regional security. Instead of traditional realist security concept, the concept of comprehensive security came, where energy is one of the most important dimensions. This measurement is becoming one of the most important measurements in modern security concepts.

Kazakhstan's energy sector is one of the leading parts of the socio-economic life of the republic. In this sector a significant portion of industrial production is made, and Kazakhstan is largely developed by energy exports. Therefore, now it is very important to identify the main strategy for sustainable energy development in the long term.

The geopolitical aspects of energy security of Kazakhstan

Kazakhstan is one of the important elements of the global energy infrastructure, therefore an essential component of its foreign policy is aimed for solving the problem of stability and security of the domestic export routes of hydrocarbons.

The strategy of Kazakhstan "Kazakhstan-2050 ", where global energy security is the fifth call of the XXI century, it is noted that "our country which has the largest world-class oil reserves and gas, will not retreat even a step from its policy of reliable strategic partnership and mutually beneficial international cooperation in the energy sphere " (Kazakhstan-2050).

In the years of independence international trade allowed to Republic of Kazakhstan increase the production of crude oil and gas condensate from 26.6 million tons in 1991 to 80.8 million tons in 2014 (Shejkin, 2015). Due to oil exports Kazakhstan has laid the foundation for the transition from extensive form economic development to intensive, and the crisis in the global economy encourages Kazakhstan to accelerate the qualitative change.

The country's leadership is well aware that at the moment the concept of energy security cannot be used in isolation from the process of globalization and a refusal from recognition the globalization of the energy security is the way to "energy egoism" (Filipchenko, 2005).

The need to fix the problem of ensuring the energy security of the country is now extremely important due to the tension of the fuel and energy balance of power shortages in the majority of resources. The transition to sustainable development is a necessity for the Republic of Kazakhstan. The root of many social and economic problems of the Republic of Kazakhstan is historical imbalance, when the country consumes resources disproportionately in comparison with their production.

Threats to national energy security of Kazakhstan can be classified into types of: economic, socio-political, natural and man-made, and management group of risk factors. Also can be selected a group of "external" threats posed by the actions of other countries. Particular attention should be given to a wide range of "external" risks, including dependence on transit routes, possible discriminatory measures on the part of the consumer countries, and dependence on the power of frontier regions of foreign partners and on equipment imports.

It is well known that at present time there is competition between the suppliers of energy resources, and it should be built into the system of global energy security. The most important condition for this is to depoliticize energy security (Baranov, 2015). The very attempt of making energy as a necessary condition for economic growth is a challenge to global energy security system as a whole (Baizokova, 2010).

Kazakhstan seeks to establish and strengthen relations (Baizakova, 2010) with the leading countries of the world, to participate in the international political, military and economic organizations to the needs of own economic development. On the one hand, Kazakhstan is a kind of a bridge between Europe and the Asia-Pacific region. On the other hand, Kazakhstan having regional neighbors as Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Afghanistan, have to solve problems of regional significance, including the required global order tasks.

The geographical position of Kazakhstan makes it necessary to build a network of export pipelines through the territory of neighboring states. The effective functioning of the CPC pipeline, the commissioning of thousand kilometers oil pipeline Atasu-Alashankou, joining to the project Baku-Tbilisi-Ceyhan, as well as the study of other possible options, are a testament of the intensive work carried out by Kazakhstan on the development of new export routes and reflects the balanced foreign policy of our state.

Pledge of international energy stability is not only in the combined interests of consumers (Putin, 2006) and suppliers of resources, but also in harmonization of the approaches of global geopolitical players and transnational energy corporations.

Interests of multi-vector energy and pipeline policy of Kazakhstan define areas of cooperation with our key partners as Russia, China, the US, the EU and neighbors in Central Asia.

Kazakh-Russian cooperation in the energy sector

Kazakh-Russian cooperation in the energy sphere is developing dynamically (Klare, 2004) in the spirit of the traditional partnership for mutual benefit and trust basis. The cooperation between Kazakhstan and Russia in the energy sector was initiated in the first half of the 90s. However, in the active phase of the relationship began to go around since the beginning of 2000, since the prices for hydrocarbons began rising.

In the energy sector the turning point began in relations between Russia and Kazakhstan in 2006. During the visit to Russia of the President of Kazakhstan Nursultan Nazarbayev, the Presidents of both countries have declared their intention to strengthen cooperation. "Energy is one of the most fundamental areas of our cooperation, - Putin said," (2006). Until then, all the agreements of Russia and Kazakhstan in the energy sector remained on paper and not implemented because of the differences between the parties in the price of gas purchased by Russia. However, at a meeting in 2006 it was finalized by the most topical issues of energy cooperation between the two countries.

From the point of view of energy security, an important decision was the participation of Kazakhstan in the implementation of the Russian initiative to establish the International Uranium Enrichment Center under control of IAEA.



Thus, the cooperation between Kazakhstan and Russia in the energy sphere is dictated both by the pressing needs of the national economies (the solution of energy scarcity) and mutual complement of production facilities and technologies. By shaping a common energy partnership and single Eurasian energy space, it is possible not just to minimize all kinds of economic risks of negative impact on the energy sector of the partner countries in the EEA, but benefit from it maximally in the long term.

Kazakh-Chinese cooperation in the energy sector

It is necessary to bear in mind that the maintenance of energy security, given the rapidly growing China's dependence on external sources is a key long-term challenge facing the Chinese leadership. In recent years, China has become "clean" importer of all the major energy resources (coal, oil and gas), which is caused primarily by high economic growth rates and persistent over the last decade.

As Kazakh experts mark, recently the Chinese trend of exports of energy resources is potentially one of the key energy policies in Central Asia (Namazbekov, 2015).

Cooperation between Kazakhstan and China is strategically beneficial to both countries and has a large untapped potential. A favorable framework for the development of bilateral relations in the energy sector is the factor that China has become the largest energy consumer in the world. The fundamental impetuses for the development of cooperation are the geographical proximity and the absence of transit countries, as well as the overall user-friendly nature of the relationship.

According to Kazakh experts, should be taken into account four main potential risks of the Kazakh-Chinese cooperation: firstly, the "resource curse" and "the burden of industrialization"; secondly, a critical attitude in Kazakhstan to Chinese companies; thirdly, criticism of corruption in Kazakhstan and "bad image" of China; fourth, the dissatisfaction on the part of Russia, the USA and the EU (Suleimenov, 2013).

Energy cooperation between Kazakhstan and China should develop in different directions. At the same time the Kazakh side should actively promote joint projects in the field of supply of high value-added products, such as nuclear power plant construction, and joint development of renewable energy projects. Priority development of innovative component of bilateral cooperation will gradually move away from the raw model of Kazakhstan integration into the economies of East Asia. It will also enable Kazakhstan to take a strong position in the emerging markets of North-East and South-East Asia.

This cooperation affects the energy policy of the other players. Deepening of energy cooperation between Kazakhstan and China has both positive and negative impact on the EU energy policy and strategy. On the one hand, the direct consequences of China's presence and expansion of influence in Kazakhstan and in Central Asia may be considered by some scientists as a negative signal for EU countries to strengthen competition for energy resources. However, at this stage, energy competition at the national level is still very limited.

On the other hand, the Kazakh-Chinese energy cooperation at the regional level may indirectly contribute to the consolidation of the EU presence in the

region, as this cooperation weakens Russia's monopoly on Central Asian oil transportation (Baizakova & Sulejmenov, 2013).

Some European scholars contest the hypothesis that the energy cooperation between Kazakhstan and China did not have a negative impact on the geopolitical interests of the international players in the region (Blank, 2011).

The US policies in the energy sector

The foundation for energy cooperation between Kazakhstan and the United States was founded by visit of Nursultan Nazarbayev in the fall of 1997 to the United States. The visit had a pronounced economic character. The core of his program was the "Agreement on the exploitation of Caspian oil and gas fields, including offshore" (Agreement on exploitation of Caspian oil and gas fields, including offshore, 1997).

Since 2001, Kazakhstan and the United States established the US-Kazakhstan Energy Partnership. In 2001, the Energy Strategy developed by the administration of George. W. Bush was approved, where a separate chapter was devoted to the Caspian region and the need in development of Caspian resources, including in Kazakhstan (Klare, 2004).

Priority of development of oil and gas in the Caspian region in general and Kazakhstan in particular, is justified by several factors. Large quantities of hydrocarbons and interlacing economic safety factor with purely political issues, allow both to solve the economic problems of the United States and to convert interests in a particular geopolitical strategy in the whole Eurasian space. That is why the United States adhere to the line, which consists in multi-variant littoral countries of hydrocarbon transportation routes.

There can be observed a certain dualism in the discussion of analytical centers of the USA, in the Capitol on post-afghan US policy in Central Asia, indicating that Washington is looking for a new model of presence after the withdrawal of allied troops from Afghanistan.

So, J. Mankoff (2014), from Center for Strategic and International Studies (CSIS) in Washington, said that after 2014, the Central Asia will cease to be a priority of US foreign policy.

At the same time, a former aide of John Kerry for South and Central Asian Affairs R. Blake (2011) said that Central Asia is becoming more important for the United States. Perhaps this duality of determining the importance of the region is due to the lack of a unified foreign policy in Central Asia strategy, and it complicates the search for targets for developing post-afghan foreign policy.

United States over the past few years put a long-term energy security at the heart of foreign policy and a number of domestic initiatives.

All three of these competitors have some interest (Namazbekov, 2015), some resources and some conception of its presence in Central Asia. China determined support economic development countries in the region as the main direction of its policy. Russia's policy is aimed at ensuring the stability and the US aimed at democracy.

In the context of the internal Ukrainian crisis, the Obama administration has taken the path of folding ties with Russia. In early August 2015 the United States extended economic sanctions against Russia. The agency "Reuters" reported that the sanctions list included many companies in the Russian energy



sector (Hay, 2015). US sanctions have affected more than 90% of the Russian oil sector, and almost all Russian gas production (Kaspijskaya geografiya i geopolitika, 2014)

In the medium term, according to analysts, the US and Russia relations will maintain their regular instability that most affects the economy, particularly in the energy sector. Mutual sanctions hinder the energy dialogue, as it is possible that will lead to full diversification of energy supply of both countries, so that there will be changes in the international energy arena.

The probability of the "energy" conflict between the US and China will depend on three major factors:

- resistance to further growth of China as an economic power and its progress;
- the possibility of the global market to meet sufficient world's needs volumes of energy commodities;
- factor of the level of cooperation of each of the two states, for example, with members of OPEC, especially if will be observed the lack of energy raw materials (Baizakova, 2010).

Key countries of OPEC which constrain China's actions, or the United States, can become to each other the most important achievement of circumstances favorable to their own interest strategic position in the global energy market.

It should be added that both China and the United States, can go on creating opposing power alliances, where they have key role. For example, China is in a position to use the potential of the SCO Energy Club in future, with the addition of Venezuela and Iran, which will create a system of reliable energy supplies.

The EU policy in the energy sector

EU has significant interest as a major potential consumer of energy resources, especially in oil and gas. In general, these interests boil down to the fact that the EU had the right to vote on matters relating to energy production in the region, establishing a network of oil and gas pipelines and the issue of the jurisdiction of the Caspian Sea. Despite the fact that the legal status of the Caspian Sea has not been defined in many European countries like Britain, France, Italy, Germany, they have a keen interest to the region.

European Commission knows that in future Caspian resources should play an important role in energy security of Europe and at the same time reduce the EU's dependence on Russia. EU currently consumes 620 million tons of oil per year, where 450 million tons are imported (Litovka & Mezhevich, 2002).

Today, the European Union, affecting the development of the transport corridor that will cross the oil and gas to Europe, may be a kind of arbiter and guarantor of stability in the face of specific countries, and in the face of the whole organization.

An important fact is that EU countries have an important direction to encourage the development of alternative energy. Currently, non-traditional sources cannot compete with the traditional (coal, oil, gas). Therefore, in the European countries are provided variety of benefits of alternative energy as: grants and loans at low interest rates; remove of the fiscal burden with part of

the profits invested in the development of the industry; exemption of consumers "clean" energy from environmental taxes, and others.

Thus, the EU has considerable experience in using and encouraging renewable energy sources, which are usually related to solar, wind, small rivers, tidal, wave, biomass, geothermal energy. Closer ties, whether in the form of supply of natural gas or cleaner technologies, could benefit both parties.

In December 2015 the European Union and Kazakhstan signed a new "enhanced" agreement on an expanded partnership between Kazakhstan and the European Union, which along with other areas also contains a call for greater cooperation on energy issues.

Energy cooperation gets more important in the new agreement, as Kazakhstan is the third supplier of energy to the EU and European companies are actively investing in Kazakhstan, especially in the research of new boreholes. For Kazakhstan it is also important to study the European experience of renewable energy sources.

In July 2015 the European Council adopted the Action Plan for Energy Diplomacy to support diversification with emphasis on the Southern Gas Corridor - South Caucasus - Central Asia. The initiative predictably led to discussion about whether Kazakhstan is on a par with Russia is able to supply gas to Europe (Sotrudnichestvo Kazaxstana s ES ugrozhaet interesam Rossii, 2016).

In addition, Kazakhstan is a leader in global exports of uranium and many other important raw materials used in the production and storage of renewable energy. However, its export potential is contrary to the economic and geopolitical interests of Russia, which is the largest supplier of gas to the EU.

Expansion of ties on renewable energy sources, will allow Kazakhstan to free up resources for export to Europe, where Kazakh gas will be another rival for Russia.

However, for Russia, China, and the EU Kazakhstan has a strategic importance in not only to its geographical location and oil fields. The growth of economic indicators in Kazakhstan is more than in the other four Central Asian states combined. Also, the conditions for business development in Kazakhstan are considered the best in the region. Considering the construction of the new transcontinental transport routes, Kazakhstan will play a fundamental role for its partners in energy cooperation.

Kazakhstan and regional cooperation in the energy sector

Kazakhstan has a multi-vector foreign policy, and integration with the CIS countries is one of the most important parts of the overall Kazakhstan's integration into the world economy and international economic connections. As a part of the common Eurasian space, the Central Asian republics are closely connected with the various transportation networks and telecommunications among themselves and other CIS member states. The vast majority of these highways emerged in recent decades. The lack of their own international communications causes difficulties for Central Asian states to enter the external market. In our opinion, the energy factor could be the start of integration, rather than discord and conflict in the Central Asian region, which requires reliable security of general - regional and European safety structures.



In general, the economic potential of the Central Asian states can be regarded as the basis of a new model of cooperation and economic integration. The Central Asian region can become a bridge between European, Asian and Middle Eastern countries.

Central Asia has a great potential for the development of renewable resources (wind power, hydro, solar energy), but today they are not able to solve these problems by themselves, so it is necessary to cooperate with the developed countries. As it was mentioned before, the EU countries produce at least 70% of the energy in the world that is produced by wind turbines. It is possible to gain an experience in introduction of alternative sources and development of energy-saving resources and environmentally friendly technologies. The Central Asian countries have a significant amount of renewable energy resources, in the form of solar and geothermal energy, wind, solar hydro energy. However, today they are not able to solve all the major environmental problems in the region by themselves, and therefore it is necessary interact and cooperate with developed countries, especially the EU.

It is determined that both Kazakhstan and other Central Asian countries are not able to handle the problems they face on their own. The most effective way to improve their energy security could be the creation of major interregional projects by combining the pipelines into the regional system and the creation of a common energy space. This kind of projects can be implemented both in the supply of primary energy resources (oil, gas), as well as in the field of electricity supply. At this point in Central Asia, there is no comprehensive mechanism to provide regional energy security. The SCO Energy Club, and the creation of a power unit in the framework of the Central and North-East Asia cooperation can play more active role in providing energy security in the future. A more active role to ensure it can play in the future.

SCO is an effective meeting place and a buffer zone for Kazakhstan, China and Russia. It is fair enough what some foreign experts note in this regard: "At the geopolitical level, the alliance of Moscow and Beijing in the SCO is beneficial because it serves as a stabilizing factor in Central Asia" (Peyrouse, 2009).

Energy integration in the SCO countries is an important and timely initiative that is able to solve basic problems of the Commonwealth. At this stage, the energy integration within the SCO is mainly initiated by its three members - China, Uzbekistan and Kazakhstan. However, SCO still does not have clearly defined behavior rules and obligations on energy issues.

Perspective for Energy Development in the Republic of Kazakhstan

Implementation of one large-scale gas pipeline project to Europe via Iran and Turkey, to Pakistan through Afghanistan, to China and Japan through Uzbekistan and Kazakhstan can drastically change this gas supply scheme on the Eurasian continent and may require "unprecedented regional cooperation", also it will contribute to the creation of a large number of jobs and an end regional conflicts. It is the future of economic interests, if it will have non-conflict developments. Perspectives on Energy Development in the Republic of Kazakhstan expect:

— Provision of an acceptable quality, the required volume and affordability of different types of energy in all regions for all groups of consumers over the

forecast period, which is an indicator and guarantee of the energy security of the Republic;

— achievement and maintenance of the required provision level of primary and final energy with a significant change in the internal and / or external environment that characterizes the energy independence and energy sustainability of the country;

— Provision of the energy consumption level not lower than the social minimum in critical and emergency situations.

Energy independence is a powerful mechanism itself that provides the energy security of the country and guarantee energy sustainability in relation to external factors.

Factors of energy independence that provide accessibility to the required form of energy in the required volumes in any region are key indicators of energy security in relation to the internal effect. These factors characterize the stability of the country's energy sector to external conditions (Lyashok, Lyashok & Voznesenskij, 2002).

Sustainable energy development in the Republic of Kazakhstan also provides:

— The achievement of world-class production efficiency in the republic, transformation, transportation and use of fuel and energy resources;

— Reduction of energy facilities' impact on the environment to the level that ensures self-healing or recovery with the use of specific technologies;

— Achievement of optimal technological and technical structure of the energy system in the forecast energy needs;

— Achievement of a high level interoperability of energy resources with the mutual functioning of different energy supply systems.

The environmental aspects of the energy policy of Kazakhstan

The core of Kazakhstan's energy strategy is based on the principle of economic expediency and minimization of anthropogenic energy impact on the environment.

If we consider that at the present time the almost entire range of environmental issues are represented in the Central Asian region, today the issues of environmental well-being of the region are sensitive enough.

In 1980, the understanding of security concept has expanded and the list of threats to national security of states has grown. This list included more and more threats related to the environment. In 1983, R. Ullman (1983) offered an updated and extended definition of the term "threat to national security", which at that time already included threats connected with environmental change. According to R. Ullman (1983), a national security threat is a phenomenon, action or series of events that:

— Can (threaten to) provoke a sharp or gradual deterioration of the living standards of state inhabitants;

— Can (threaten to) reduce the field of policy alternatives available to the government of the state and non-state actors (individuals, groups of individuals, corporations) within a particular State (Ullman, 1983).



Environmental security issues in the Republic of Kazakhstan become increasingly important, especially in the conditions of economic recovery, when the industry, transport, infrastructure facilities are constantly increasing human impacts on natural ecosystems. Kazakhstan is an industrially developed state, where many small and large businesses operate successfully, due to their success an economic potential is built that gives an opportunity to generate a fairly high standard of living. However, the development of the country's industrial capacity has the side effect of pollution by products of these enterprises. So, in the result of mining and metallurgical complex performance in Kazakhstan it has accumulated more than 20 billion tons of industrial waste with an annual admission of about 1 billion. 95% of extracted ore's total volume falls into the waste, which is often extremely toxic and placed in places inadequate for storage.

Available statistics shows the growth of toxic waste. Over the past four years, their annual formation increased from 92 to 150 million tons in 2012, or increased by 1.6 times. They are mainly concentrated in Karaganda - 29.4%, East Kazakhstan - 25.7%, Kostanay - 17% and Pavlodar - 14.6% regions. Lands of Kyzylorda, Atyrau and Western Kazakhstan regions are polluted with heavy metals and oil products. The volume of abandoned and dumped drilling waste, low-level radioactive water and the area of disturbed lands are difficult to quantify in this regions.

Today, the ecological situation in the Republic of Kazakhstan, as well as all around the world is more and more complicated (Baranov, 2015). Despite the efforts in recent years to build international and national environmental protection infrastructure, the implementation of international, regional and national environmental programs and the formation of the environmental legislation system of the state, deterioration of the environmental conditions in many regions of the country takes quite extreme forms.

One of such serious environmental threats is the level of air pollution in cities and industrial centers in the Republic of Kazakhstan, which still remains high. The list of major air pollutants in the country includes the thermal power enterprises, non-ferrous metallurgy, ferrous metallurgy, oil and gas industry. It means that the development of the energy sector of Kazakhstan causes serious environmental problems. Currently, the average emission per inhabitant in the Republic of Kazakhstan is about 200 kg of various chemical compounds per year, while in 2000 this indicator was equal to 163 kg (Ekologicheskaya situaciya Kazakhstana, 2016).

Kazakhstan in recent years has achieved some success in its policy on creating a strong energy security.

According to experts, transportation costs and losses are reduced, efficiency of the energy sector is improved, electric power production by facilities, remote from fossil fuels, with the aim of increasing the production of hydropower and other renewable energy sources is diversified. According to some estimates, Kazakhstan in 2014 produced nearly 1 billion kW / h by renewable energy sources, exceeding, thus, almost three times the performance of 2009. On the other hand Kazakhstan is seriously lagging behind comparing to other countries in the field of environmental safety. So, in 2015, the country has plummeted from 21 place to 77 in the Index of the global energy trilemma (Syrlybaeva, 2016).

Thus, the energy security of the country should be closely linked to environmental safety and reduce the negative impact of energy on the environment. According to Kazakh experts, the plans on expansion of production in the Caspian Sea (development of the Kashagan field) "can lead to the destruction of intact ecosystems in large territories with uncertain environmental consequences, not only for the country but also for the unique biodiversity of the Caspian sea: sturgeon population, birds, seals and etc." (Nacionalnyj doklad o kadastrе antropogennyx vybrosov iz istochnikov i absorbcii poglotitelyami parnikovyx gazov, ne reguliruemyx Monrealskim protokolom za 1990-2009 gg., 2011).

With the development of Kazakh's indicator was equal to 163 tan's energy sector other global environmental challenges are also closely related., After Kazakhstan joined the Kyoto Protocol in 1999, carbon dioxide emissions, the volume of which largely depend on energy gets particular relevance. As a result of the inventory of greenhouse gases in Kazakhstan total amount of gas emissions with direct greenhouse effect in 2009 was 278.4 mln. tons of CO₂ equivalent, including 245.9 million tons. Emissions from the energy performance, 14.3 million tons of industrial processes 23.4 million tons from agriculture and 6.2 million from the "waste" category. Further economic growth will only increase these emissions, and production of new energy will inevitably lead to the degradation of large areas.

Kazakhstan is among the five world leaders in carbon-intensive states. It means that it has one of the not eco friendly economies. In this situation, according to experts of Kazakhstan, for Kazakhstan, as a country that is the largest exporter of oil, gas and coal, the actual steps of using renewable energy will be an indicator of its competitiveness. Kazakhstan passed the transition period, and now it should make the transition to the principles of sustainable development with a view to its long-term national strategy (Conception of Kazakhstan on transition to green economy, 2013).

The goal of Kazakhstan is the introduction of low-carbon, or "green" economy, which will reduce emissions of various harmful substances, that will prevent and reduce environmental pollution. To this end, Kazakhstan has adopted the concept of the transition to a green economy (Shabanova, 2016).

For Kazakhstan, sustainable development and "green" economy are not theoretical concepts, and vital issues, The transition to a "green economy" will give an opportunity to Kazakhstan to achieve its goal of becoming one of the 30 most developed countries in the world.

It is estimated that by 2050 the conversion into the "green economy" will further increase the GDP by 3%, create more than 500 thousand new jobs, create new industries and services and provide universally high quality of life for the population.

The main prerequisites for the transition to a "green economy" in the Republic of Kazakhstan:

1. There is an inefficient use of resources in all major sectors. The economic losses incurred as a result of the low productivity of land is 1.5-4 billion. US dollars a year, and by 2030 could be even more, which could have social consequences for the agricultural sector, which employs 30-45% of the population in the areas of North-Kazakhstan, Almaty and South Kazakhstan.



2. Imperfection of energy tariff system and pricing does not create an incentive for technological improvement of the industry.

3. Kazakhstan currently faces serious deterioration of the state of natural resources and the environment in all the most important environmental indicators. Almost a third of the agricultural land is now degraded or seriously threatened, and more than 10 million hectares of potentially arable land was abandoned in the past.

Currently there is a forecast of shortage in amount of 13-14 billion m³ of sustainable water resources to meet the needs of the economy in 2030. Environmental pollution has a serious negative impact on human health.

4. Nowadays, Kazakhstan's economy is dependent on commodity exports and, therefore it is under influence of sharp fluctuations of external commodity prices. Kazakhstan will reach the maximum level of oil production and export in the period between 2030 and 2040. Furthermore, there is a high level of uncertainty in hydrocarbon prices.

5. Kazakhstan inherited a considerable territorial heterogeneity in economic performance, life standards and the condition of the environment. The development of new industries and "green clusters" will help to reduce the inequality in the development of regions and use their potential in renewable energy, agriculture, water management, waste management and other sectors.

As a part of this concept, Kazakhstan plans to make a significant upgrade and development of infrastructure over the next 20 years: 55% of buildings and 40% of total assets of the power plants in 2030 will be built from scratch.

There is a unique opportunity for country to create a new infrastructure that will use resources efficiently. Otherwise, with no action in the country, it will soon face the problem of outdated and uncompetitive infrastructure. Competitiveness of "green" technologies is growing rapidly, and many alternative energy technologies in the near future will offer less expensive ways to produce electricity comparing to traditional sources.

In this regard, Kazakhstan is promoting initiatives for the development and implementation of advanced services in the field of sustainable energy, including the Global energy and environmental strategy aimed at finding solutions to the problems of post-industrial society.

In order to provide the environmental safety, Kazakhstan continues to pursue an active policy in the field of international cooperation in environmental protection.

The country is a member and active participant in various international commissions and processes aimed to the development and implementation of international agreements on environmental protection and sustainable development at the global and regional levels.

One of the global international initiatives of Kazakhstan in the sphere of environmental protection is a "Green Bridge" partnership program. The main course of the "Green Bridge" partnership program is an international collaboration for providing "green" economic growth through technology transfer, knowledge sharing and provision of financial support for the implementation of investment projects in Central Asia.

"One of the important conditions for the development of the Partnership Programme as a tool to promote the concept of "green" growth and "green" economy is the participation of Governments in reducing the rate of degradation and environmental remediation; optimal use of natural resources through "green" policies and new approaches; attracting investments for the development of "green" economy".

International environmental initiatives of Kazakhstan are accompanied by taking specific actions for their implementation. In particular, the transition concept to "green economy" is approved by the Republic of Kazakhstan and in February 2014 a draft law on amendments and additions to the 8 codes and 13 laws was prepared, in order to bring existing legislation into conformity with the Concept. Taking other action in this direction is provided with the Plan of activities on realization of the 2013-2020 transition Concept of the Republic of Kazakhstan to "green economy", including, the establishment of the Council for the transition to "green economy" under the President of the Republic of Kazakhstan and steps to improve the waste management system.

Thus, we can conclude that today Kazakhstan in union with the world community has come a long way in environmental protection (Poslanie Prezidenta Respubliki Kazakhstan - Lidera nacii Nursultana Nazarbaeva narodu Kazakhstana, 2015) and improving environmental legislation in accordance with modern requirements. The implementation of the strategy of ecologically safe development of the Republic of Kazakhstan takes into account national and global environmental problems and their political aspects. Moreover, the problem of environmental security is closely connected with the definition of priorities for the use of the resource potential of the country, economic modernization strategy, foreign policy objectives, etc

Energy security, which is considered as one of the basic elements in the system of economic security (Filipchenko, 2005), implies the optimal use of limited resources and use of environmentally friendly nature - energy - and material - saving technologies, including the extraction and processing of raw materials, the creation of environmentally friendly products, minimization, recycling and disposal of the waste.

Transition to environmental economy and sustainable development economy associated with the growth of production and consumption of natural resources and their depletion, degradation and irreparability, which negatively affects the social development of the state.

As a result, the urgency of solving many environmental problems and the growing conflict potential needs urgent solution, so today the active participation of the international community is required. However, such participation hinders the partial powers and short-term donor projects. The experience has shown that short-term, uncoordinated and fragmented partial donor efforts do not allow solving the long-term and cross-cutting environmental and development issues.

The lack of coordination among donors entails the development by countries of numerous and poorly executed strategies, duplication of programs, fragmentation of efforts and resources of countries and donors.

The lack of required own capacities in Central Asia requires the support of national efforts by international organizations, which could play more effective



role for supporting the cooperation in the region. According to experts, in the countries with transition economies and developing countries, boundary problems have been successfully solved only where there was support from international organizations that provide a neutral platform for trust, guarantor decisions and supporting the financing of cross-border cooperation. Over the time, the Central Asian countries will take the international experience and create their own potential. However, the urgency of solving many environmental problems and the growing conflict potential needs urgent solution, so today the active participation of the international community is required.

Conclusion

In conclusion, the energy sector of Kazakhstan, which is in its infancy and provided with its upgraded provision, namely in the market economy, can become a fundamental way through the involvement of the country in the global economic structure in Europe and Asia, and therefore claim for its security from the various international structures, institutions and organizations.

Implementation of the sustainable development principles of will help to overcome the imbalance between the economic, social and environmental growth indicators of the country.

Energy security in Kazakhstan can be defined as an opportunity (Shejkin, 2015), on the one hand, to implement its strategy for world energy markets, and on the other hand to develop energy infrastructure and back-up power, implement the potential of energy saving and environmental protection of technologies that are used, provide the flow of investments into the sector, diversify the internal energy balance with a goal to fully meet the needs of the national economy with energy resources. Kazakhstan will continue to keep the position of diversification of hydrocarbon transportation routes to the world market and the most efficient operation of pipeline systems.

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