Nazifov Farkhod Mirzoshoyevich, Zobov Alexander Mikhaylovich
Peoples’ Friendship University of Russia

THE PROSPECTS OF ECONOMIC RELATIONS
IN ENERGY SECTOR OF THE REPUBLIC OF
TAJIKISTAN AND ITS INDUSTRY DEVELOPMENT

Summary

This research identifies the present position of economic relations in energy sector of Tajikistan. Electricity is essential for development of the country, economic growth, job creation, and modern life. Without it, poverty endures. This study is based on statistical methods. In 2009-2010 the share of electricity, in a total volume exports are sharply decreased. From 6.3% to 0.3%, as Uzbekistan has ceased to import electricity from Tajikistan. Also we analyzed the CASA-1000 project. This project demonstrates landmark cooperation among the Kyrgyz Republic, Tajikistan, Pakistan, and Afghanistan. Tajikistan was confirmed as the host of the official ceremony launching the Project’s implementation phase on May 12, 2016 in Dushanbe with participation of high-ranking officials of all four countries, representatives of the International Financial Institutions, CASA-1000 Secretariat, donors and partners.

Key words: economy, prospects, agriculture, energy, competitiveness, development, export, industry, electricity generation.

JEL codes: O10, O11, Q25, Q26, Q34, Q4, Y10

“Economy – is not only a science that offers a theoretical interpretation of the rational economy management, but also a tool for changing the world for the better”,
- Grzegorz Witold Kołodko

Introduction

The Republic of Tajikistan is a member of the international community and has relations with many countries in the sphere of foreign economic policy. The Republic declared an independent and democratic country. Tajikistan is a member of many international and regional organizations, carries out diplomatic and trade relations with other countries. Today, Tajikistan has trade
relations with more than 100 countries, and these relations are enhanced every year (Bilolov 2013, p. 10).

According to the statistics, in January 2015, turnover of foreign trade of the Republic of Tajikistan amounted to $ 2.0091 billion, which is 21.9% less than in January 2014, or $ 562.4 million. The trade balance is negative. Imports in the country dominates over exports to $1.1403 billion. During the first half of 2015 foreign trade relations of the republic have been established with 78 countries around the world including 68 foreign countries and 10 CIS (Commonwealth of Independent States) countries (Khasanzoda 2015, p. 67).

Tajikistan’s export structure over the year’s remains unchanged, in the first place cotton fiber, about 56%; the last place in the export structure takes – raw aluminum, textiles, dried fruits and electricity (World Bank Group... 2015).

From 2007 to 2011, the Tajikistan’s independence from foreign markets has only increased. While the share of imports increased by 29.8%, the share of exports from 2007 to 2011 decreased in volume by 14.4% (World Bank Group... 2015).

Aluminum and cotton continue to dominate exports. Sent to the European Union (EU), China and Turkey. The predominance of raw materials in export is a threat to the economic security of the country. Commonwealth of Independent States (CIS), with which Tajikistan more diversified trade relations, imports only 0.6% of primary aluminum and 32.1% cotton.

**Statistical methods and results**

The research is based on statistical methods. In 2009-2010 the share of electricity, in a total volume exports are sharply decreased. From 6.3% to 0.3%, as Uzbekistan has ceased to import electricity from Tajikistan. After 2009 the growth of exports of electricity is steadily growing, but to reach the level of the year 2009, still unreal. The table-1 according to the Statistics Agency under the control of President of the Republic of Tajikistan considers the export of electricity to million dollars (Agency on Statistics... 2016).

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Cotton fiber</td>
<td>100</td>
<td>201</td>
<td>197.3</td>
<td>223.9</td>
<td>189.2</td>
<td>132.5</td>
</tr>
<tr>
<td>Electroenergy</td>
<td>63</td>
<td>4</td>
<td>4.3</td>
<td>21.3</td>
<td>33.3</td>
<td>48.1</td>
</tr>
<tr>
<td>Other</td>
<td>847</td>
<td>990</td>
<td>1055.7</td>
<td>1114.5</td>
<td>939.3</td>
<td>796.7</td>
</tr>
<tr>
<td>Export - total (mln USD)</td>
<td>1010</td>
<td>1195</td>
<td>1257.3</td>
<td>1359.7</td>
<td>1161.8</td>
<td>977.3</td>
</tr>
</tbody>
</table>

Source: Agency of Statistics... (2016).
Based on Table 1 we construct a graph, shows that the export of electricity decreased sharply in 2010, because of the refusal of Uzbekistan to import electricity.

**Figure 1. Export of goods from the Republic of Tajikistan**

[Bar chart showing export data from 2009 to 2014]

Source: own preparation.

Table 2 presents the percentage change in the dynamics of the share of electricity from 2009 -2014.

**Table 2. The percentage change of export of the Tajikistan in the period of 2009-2014**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Cotton fiber</td>
<td>-7</td>
<td>101</td>
<td>-2</td>
<td>13</td>
<td>-15</td>
<td>-30</td>
</tr>
<tr>
<td>Electroenergy</td>
<td>2</td>
<td>-94</td>
<td>8</td>
<td>395</td>
<td>56</td>
<td>44</td>
</tr>
<tr>
<td>Other</td>
<td>-32</td>
<td>17</td>
<td>7</td>
<td>6</td>
<td>-16</td>
<td>-15</td>
</tr>
<tr>
<td>Total export (%)</td>
<td>-28</td>
<td>18</td>
<td>5</td>
<td>8</td>
<td>-15</td>
<td>-16</td>
</tr>
</tbody>
</table>

Source: like in Table 1.

The data in table 2 presents that in 2010 there was a sharp decrease in electricity exports by 94%. Exports of Tajikistan for the period 2013- 2014 generally shrinking. In 2014 the share of exports decreased by 16%, in 2013 by 15%.

But the share of electricity exports for the past five years has been steadily increasing. We will consider the dynamics of generation and consumption in Table 3.
Table 3. The dynamics of generation and consumption of electroenergy in the period of 2009-2014

<table>
<thead>
<tr>
<th>Data</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2014 Growth rate million kWh</th>
<th>%</th>
<th>Growth increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation of electroenergy, million kWh</td>
<td>16 100</td>
<td>16 400</td>
<td>16 200</td>
<td>17 000</td>
<td>17 100</td>
<td>16 500</td>
<td>400</td>
<td>102.48</td>
<td>2.48</td>
</tr>
<tr>
<td>Generated electroenergy out of the country, million kWh</td>
<td>5 960</td>
<td>286</td>
<td>297</td>
<td>775</td>
<td>1 061</td>
<td>13 64</td>
<td>-4 596</td>
<td>22.89</td>
<td>-77.11</td>
</tr>
<tr>
<td>Consumed electroenergy</td>
<td>16 160</td>
<td>16 581</td>
<td>16 113</td>
<td>16 313</td>
<td>16 171</td>
<td>15 160</td>
<td>-1 000</td>
<td>93.81</td>
<td>-6.19</td>
</tr>
<tr>
<td>Industry and construction</td>
<td>7 053</td>
<td>7 434</td>
<td>6 450</td>
<td>6 344</td>
<td>5 496</td>
<td>4 057</td>
<td>-2 996</td>
<td>57.52</td>
<td>-42.48</td>
</tr>
<tr>
<td>Transport</td>
<td>41</td>
<td>30</td>
<td>161</td>
<td>37</td>
<td>38</td>
<td>41</td>
<td>0</td>
<td>100.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Agriculture</td>
<td>3 722</td>
<td>3 593</td>
<td>3 742</td>
<td>3 832</td>
<td>4 103</td>
<td>4 020</td>
<td>298</td>
<td>108.01</td>
<td>8.01</td>
</tr>
<tr>
<td>Other sectors</td>
<td>3 245</td>
<td>3 194</td>
<td>3 489</td>
<td>3 655</td>
<td>4 006</td>
<td>4 238</td>
<td>993</td>
<td>130.60</td>
<td>30.60</td>
</tr>
<tr>
<td>Loss network of general use</td>
<td>2 099</td>
<td>2 330</td>
<td>2 271</td>
<td>2 445</td>
<td>2 528</td>
<td>2 804</td>
<td>705</td>
<td>133.59</td>
<td>33.59</td>
</tr>
</tbody>
</table>


Electricity generation to compare with 2009, increased in 2014 by only 2.48%. The export reduced by 77.11%. The electricity consumption in the country has decreased by 6.19%, with much loss of electricity in the public network, increased by 33, 59%.

As already noted, every year in the autumn-winter period in the country occurs severe restrictions on the consumption of electricity. The electricity deficit in the autumn-winter period is about 4-4.5 billion kWh. But in summer the country is able to generate electricity in the volume, which allows not only for the domestic needs of the country, but also to export the electroenergy to other neighboring countries.

**CASA-1000 project**

A new electricity transmission system to connect all four countries, called CASA-1000. The Kyrgyz Republic and Tajikistan are two countries in Central Asia endowed with some of the world’s most abundant clean hydropower resources with water cascading from the mountain ranges and filling the rivers every summer. Both of these countries have a surplus of electricity during the summer. Nearby in South Asia, Afghanistan and Pakistan suffer from chronic electricity shortages while trying to keep pace with a fast-growing demand for it. Pakistan cannot meet its citizens’ electricity needs, especially during the sweltering summer months, leading to frequent power cuts that hurt
industrial production, sometimes close small businesses, and lead to job losses. Meanwhile millions of people still live without electricity altogether.

Figure 2

Realizing the CASA-1000 vision will require:
- 500 kV line from Datka to Khudjand (477 kilometers)
- 1300 megawatt AC-DC Convertor Station at Sangtuda
- 750 kilometer High Voltage DC line from Sangtuda to Kabul to Peshawar
- 300 megawatt Convertor Station at Kabul (with import and export capability)
- 300 megawatt DC-AC Convertor Station at Peshawar

Since 2010, the Republic of Tajikistan participates in the elaboration on the question of the implementation of project CASA – 1000. The largest in Central
Asia, which envisages the organization, mainly in the summer period, export of electricity from Tajikistan and Kyrgyzstan to Afghanistan and Pakistan, with a total cost (including contingencies and interest during construction) of about $1 billion.

CASA-1000, would help make the most efficient use of clean hydropower resources in the Central Asian countries by enabling them to transfer and sell their electricity surplus during the summer months to the deficient countries in South Asia. The CASA-1000 project would also complement the countries’ efforts to improve electricity access, integrate and expand markets to increase trade, and find sustainable solutions to water resources management.

In September 2013, the participant countries of the project CASA-1000 (Kyrgyzstan, Tajikistan, Afghanistan and Pakistan) was signed in Islamabad an agreement, which accordingly Kyrgyzstan and Tajikistan pledge during the summer period (May to September) to supply 1,000 MW of electricity to Pakistan, and 300 MW to Afghanistan for 15 years.

Out of this amount, Kyrgyzstan will supply 2 billion kw/h and the Republic of Tajikistan will supply 3 billion kw/h. As the increasing of export potential of Tajikistan and Kyrgyzstan, is also expected to draw a line in winter period.

The Intergovernmental Council (IGC) approved the restructuring of the project by reconfiguring the three terminal design to a two terminal design and moving convertor station in Pakistan from Peshawar to Nowshera as the more secure place due to the difficulties in obtaining acceptable proposals for a three high-voltage, direct current (HVDC) terminal configuration.


The Republic of Tajikistan was confirmed as the host of the official ceremony launching the Project’s implementation phase on May 12, 2016 in Dushanbe with participation of high-ranking officials of all four countries, representatives of the International Financial Institutions, CASA-1000 Secretariat, donors and partners.

Currently, in Tajikistan developing northern version of the transit towards the states of the Eurasian Economic Union, which is now in the direction of Tajikistan, and only exchanging with Kyrgyzstan: transmits electricity, mainly from May to October, in 2014 – about 900 million kW/h.

There is so-called pooling system by which works all over the world, it is an agreement in the region, to work on the replacement scheme. In Kyrgyzstan in the south of the country has an energy deficit. They can receive the electric
power from Tajikistan, and in its north, where the Kambar-Ata HPP exists, transfers the excess to Kazakhs. Kazakhstan in the south, lacks too. Getting there energy, they excesses of its northern regions, where there are large thermal power plants – the same Ekibastuz, given to the south of Russia, for example, to Chelyabinsk region. Russia, receives electricity in the south, could transfer it to the west. Wherein, it uses the existing power lines yet. With zero need to build only a small area.

Under such a scheme, even if Russia, Kazakhstan and Kyrgyzstan will not need of Tajikistan's energy, it can be transferred to Germany, according to the scheme of its substitution. Europe is interested in alternative, “green” energy, because they are currently giving up the nuclear power plants. On the energy market, there is a strong competition. The idea of CASA-1000, is strongly supported by the United States of America.

In this project calls for the integration of Tajikistan in the energy market in Central and South Asia and also the Pacific region, where a huge energy market with decent prices – up to 7 cents per kWh. However, it should be noted that there is a point of view of some economists, who believe that the first thing you need to generate electricity to Tajikistan’s own population, and then export it. In this opinion, many people do not agree, because the industrial complex of Tajikistan can not use all generated electricity. In summer there is a surplus of electricity. Further, when Tajikistan's competitiveness will rise to a higher level, the industry will develop serious paces, and it will be possible to use electricity in the country. Electrical energy – is the raw material, it is more profitable to process and realize the final product, but we are talking about the need for the sale of surplus.

**Discussion**

Tajikistan uses a system of cascading hydropower plants. So that, the water won’t outflow anywhere. It will just come down the cascade. It will be regulated, the inflow and outflow will be remained at the same level. Tajikistan is the main regulator of water flow. The country has one water reservoir – Nurek. Nurek reservoir, can not be used at the same time, in the irrigation and energy regimes. When the Rogun-HPP will be built, and it will be in the power mode, then will be provided an opportunity to Nurek reservoir to work at the right time, in the irrigation mode.

One of the reasons, is slowing down (from 1990-2009 years), the construction of the Rogun-HPP, was that not been studied political, environmental, economic, technological, technical and financial risks of the construction of the Rogun-HPP (Azimov 2010). A convincing argument in favor of the Rogun project, led Tew Keypers, President of «Big Media Group», which in January 2013 has
proved that «if we consider that in the future, Tajikistan will become a part of CASA-1000, then the discard of water from the reservoir will be increased in the summer periods to generate greater volume of electricity, which exports to Afghanistan and Pakistan (Kuipers 2015). In this case, the lower reaches of the country, such as Uzbekistan, really will get more water in the summer periods (Nizomova 2008).

Thus, the water-energy power of implementation of Tajikistan, which will lead to the competitiveness growth of energy sector of Tajikistan. Since only Rogun-HPP is able to generate almost twice as much electricity than the Hoover hydropower plant in the United States, can provide electricity to Tajikistan, Afghanistan and Pakistan. But it should be noted that the construction of the Rogun hydroelectric power station will incur negative consequences for Uzbekistan. Because there will be reduced demand for most of it’s energy resources and therefore will be the end of the monopoly for Uzbekistan. After the construction of the Rogun hydropower plant in Central Asia, Afghanistan, Pakistan, India, Russia and China are interested in buying a cheaper and environmentally clean Tajik electricity than expensive electricity produced by Uzbek – thermoelectric plant.

Table 4. List of enterprises – members of the Chamber of Commerce of the Republic of Tajikistan associated with the development of the energy sector, as of January 1, 2015

<table>
<thead>
<tr>
<th>Enterprise name</th>
<th>Address</th>
<th>Field of activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ministry of economic development and trade of Tajikistan</td>
<td>734002 Dushanbe, Bokhtar 37</td>
<td>The implementation of the state policy in the field of economy and trade</td>
</tr>
<tr>
<td>The National Bank of Tajikistan</td>
<td>734003 Dushanbe, st. Rudaki 107A</td>
<td>The implementation of the state policy in the field of banking system</td>
</tr>
<tr>
<td>OAHK «BarkiTojik»</td>
<td>734026 Dushanbe, st. Samoni 64</td>
<td>Supplying the population with electricity</td>
</tr>
<tr>
<td>OAO «TajikSGEM»</td>
<td>Dushanbe, St.J Rasulov 60, 874</td>
<td>The construction of energy facilities</td>
</tr>
<tr>
<td>OAO «Sangtuda-HPP»</td>
<td>734042 Dushanbe st. Ayni 48a Sozidaniye 10 floor</td>
<td>Generation and supplying electroenergy</td>
</tr>
<tr>
<td>AOOT «Dushanbe CHP (combined heat and power plants)»</td>
<td>734054 Dushanbe St. Kharorova 39</td>
<td>Generation of heat, electricity, import and export of goods and materials</td>
</tr>
<tr>
<td>Cascade of Vakhsh HPP, OAHK «BarkiTojik» NBO Sarband</td>
<td>Sarband, St. Ayni 27</td>
<td>Generation of electroenergy</td>
</tr>
<tr>
<td>OAO «PamirEnergy»</td>
<td>Khorog St. Kununova 23</td>
<td>Generation and implementation of electroenergy</td>
</tr>
</tbody>
</table>

Source: own preparation.
Interests of the country, in terms of the development of energy sector and the attraction for foreign investment, represents the Chamber of Commerce of the Republic of Tajikistan, which has extensive experience in foreign trade and wide international relations. It carries out its work in order to enhance the level of cooperation and to promote the integration of the country in the world economic system. The members of the Chamber of Commerce are ministries, agencies, private companies that deal with the country’s energy sector. In table 4, we presented it clearly.

During the activity of Chamber of Commerce, has sent an appeal “About Cooperation”. For more than 700 recipients and Chamber in 180 countries in the world – United Nation member states. The number of trade and commerce chambers, international and financial institutions that support trade and economic relations with Tajikistan, is currently increasing. The Chamber of Commerce of Tajikistan is a member of the World Federation of Chambers of Commerce/ WCF, the International Chamber of Commerce (ICC), the International Co-operation Council of Chambers of Commerce of the Commonwealth of Independent States countries, the Baltic States, Central and Eastern Europe, the International Congress of Industrialists and Entrepreneurs (IIAC), the Islamic Chamber of Commerce (Islamic Chamber of Commerce), the Confederation of the Pacific Chamber of Commerce (CACCJ).

Developing cooperation, primarily through the chambers of commerce, establishment of close economic relations, that are interested in cooperation with Tajikistan business states – participants of the CIS, Baltic States, European Union, Central and South Asia, the United States, the Gulf countries and others.

Thus, one of the key components of the work of Chamber of Commerce – is bringing objective information about the legislative bases, the investment opportunities, the rich energy resource potential of Tajikistan, on to the attention of business and public ranges.

Analysis and results

the main challenge in development of the energy sector of Tajikistan, is to attract foreign and domestic investments for implementation of energy, transport and communication projects.

Thus, the deficite of electricity hinders the development of economic sector. Adversely affect the development of business and the level of employment.

Over the years, the most important strategic direction of economic policy of Tajikistan government, is to ensure energy independence in the country.

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In solving this issue, priority is given to the completion of the Rogun hydroelectric power station. Which will not only ensure the full domestic demand for electricity, but also to export it in a large percentage to other countries.

In autumn-winter period, the insertion of a limit on electropower consumption, is detrimental to the economy of the country about $200 million.

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Perspektywy stosunków gospodarczych w sektorze energetycznym Republiki Tadżykistanu i rozwoju jego przemysłu

Streszczenie

Niniejsze badanie wskazuje na obecny stan stosunków gospodarczych w sektorze energetycznym Tadżykistanu. Energia elektryczna jest podstawą rozwoju kraju, wzrostu gospodarczego, tworzenia miejsc pracy i nowoczesnego życia. Bez niej doskwiera ubóstwo. Badanie jest oparte na metodach statystycznych. W latach 2009-2010 udział prądu w ogólnym wolumenie eksportu gwałtownie zmaal, z 6,3% do 0,3%, jako że importować prąd z Tadżykistanu przestał Uzbekistan. Dokonaliśmy również analizy projektu CASA-1000. Projekt ten wskazuje na stanowiącą kamień milowy współpracę Kirgizji, Tadżykistanu, Pakistamu i Afganistanu. Tadżykistan został gospodarzem oficjalnej uroczystości rozpoczęcia fazy wdrożenia projektu w dniu 12 maja roku 2016 w Duszanbe z udziałem wysokiej rangi urzędników wszystkich czterech krajów, przedstawicieli międzynarodowych instytucji finansowych, Sekretariatu CASA-1000, darczyńców i partnerów.

Słowa kluczowe: gospodarka, perspektywy, rolnictwo, energia, konkurencyjność, rozwój, eksport, przemysł, wytwarzanie prądu.

Kody JEL: O10, O11, Q25, Q26, Q34, Q4, Y10

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Afiliacja:
Nazifov Farkhod Mirzoshoyevich
Post-graduate student of chair of marketing
Peoples’ friendship university of Russia
Mikluho-Maklay 6, 117198, Moscow, Russia
tel.: +7 985 046 16 16
e-mail: fnazifov@gmail.com

Zobov Alexander Mikhaylovich
Head of marketing department, Professor
Candidate of Economic Sciences
Peoples’ friendship university of Russia
Mikluho-Maklay 6, 117198, Moscow, Russia
tel.: +7 916 782 18 91
e-mail: a_zobov@mail.ru