



# ENERGY SECURITY AND ENERGY UNION PERSPECTIVES FOR AZERBAIJAN

POLICY PAPER

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## ABSTRACT

Azerbaijan is a reliable partner in the energy security issue for the oil importer countries. Country has sufficiently traditional energy resources which already invested on this energy sector. However, country geographical location gives opportunity in order to use the alternative and renewable energy resources which helps to keep the balance of the utilization of energy resources. The energy security is also main important issue for the country. Therefore, country broaden the relation with the EU in the context of EU energy security and EaP partnership countries.

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## INTRODUCTION

Azerbaijan is one of the energy-rich countries of South Caucasus with advanced energy infrastructure, fossil-fuel resources and energy system, providing itself needed capacity. Establishing energy relations between Azerbaijan and the European Union have started with operating of Baku Tbilisi Ceyhan oil pipeline in July 2006. Europe is the main target market for Azerbaijan energy export strategy. In 7 November 2006, between Azerbaijan and European Union was signed memorandum on the energy sector about strategic relationship in Brussels.

In 2005, the European Union has decided to diversify the energy market which has been covered a long-term access to various energy markets. One of the common points between the EU and Azerbaijan in the energy security policy is pipelines safety issue. Given the fact that pipelines, including the Southern Gas Corridor pipeline are passing through neighboring countries, aimed at European markets, security of pipelines is enforcing by the two partners. Also, Azerbaijan is interested in the safety of export of gas to Europe. One of the common interests of energy security in the Azerbaijani sector of the Caspian Sea is the discovery of new oil fields, which solves the issue of continuous supply of gas to Europe.

Presently, energy security arranges the base of the economic and social stability. The importance of the energy security sets the energy policy agenda which includes increasing the export of natural gas to EU, managing the stabilization of the export of oil and developing the partnership with EU in order to modernize the infrastructure of the alternative and renewable energy resources. Currently, the flow ensuring of natural gas is the primary issue in terms of energy security for the EU. Therefore, Azerbaijan should increase the export of the gas. Country should control the stabilization of export of oil concerning on the reserves.

At the same time, the usage of alternative and renewable energy resources form the energy policy agenda. Country has also ample alternative energy resources in order to utilization and keeping the energy balance. Therefore, government is interested in the investing and modernizing the infrastructure on the renewable energy resources. These all are stimulating in order to diversify the usage of energy resources concerning on economic and social stability.

This policy paper is divided into 2 parts. The first part of the policy paper is devoted to the framework which indicates clearly key security issues in the country. The key energy security risks, emerging energy security risks, partnership with EU and EaP countries and overall country's experience demonstrate in the first part of the policy paper. The most necessary part of the first chapter is the partnership with EU and EaP countries which concern on solutions on energy security risks. The second part gives the comprehensive information with recommendations about the energy union strategy and national energy policy of the country. The second section of the policy paper explains the opportunities and perspectives that which can be provided by European energy security strategy to address the security problem in Azerbaijan. Also, demonstrated the synergies between country national energy policy and European energy security strategy. The last point of this section is concerning on challenges and barriers of the potential integration of Azerbaijan to the Energy Security Union. The policy paper ends with final conclusion and recommendations.

## **Describe the current key energy security risks, their causes and effects**

Historically, the usage of traditional energy resources characterized as the main ingredient of the process of economic development. Traditional resources are important issue in the process of the development of the country. Despite this, oil and gas are exhaustible and increasing of usage and demand to these energy resources is raising the hazard. However, the alternative energy resources changed this idea and also stimulated to the concept of sustainable development. In the period of the globalization, countries are setting up the economy in the direction of sustainable development. The primary aim of model of sustainable development in economic development is provide the available natural resources for usage to people' needs. If we consider the demand for energy and energy resources then we can see the importance of sustainable energy resources. The usage of alternative energy resources also increase the diversification of economy. The balances allow designing of various indicators of consumption of energy resources. So, 2014 energy balance<sup>1</sup> of Azerbaijan reflected such data as: energy intensity of GDP, power intensity of GDP, energy consumption per capita, electricity consumption per household, specific weight of expenses on electricity from total income of household, share of per capita expenses on electricity from total income of household, emissions from industrial enterprises into the atmosphere, energy dependence and other data characterizing energy efficiency for several years.

*Azerbaijan* is an energy-rich country, which is famous for its traditional energy resources like oil and gas. Energy security also arranges the main fundamental issue of the national security of Azerbaijan. Energy security means the fuel and energy supplies, ensuring the internal security in Azerbaijan. The strategy of energy security started from 1994 when the “Contract of Century” signed. The “Contract of Century” has an undeniable place in the economic development of Azerbaijan. This contract had extraordinary place in the process of ensuring fuel and energy needs not only for country economy but also for world energy provision. The reliable energy supply of strategic and important objects, security of the pipelines, diversification of energy sources, considerate of environmental requirements and efficient usage of energy resources form the principles of energy security of Azerbaijan. According to the principles of energy security we are defining the energy security risks as following.

### *1) Reduction of oil and gas outputs*

Azerbaijan has enough potential to produce and to use the alternative energy resources but still oil and gas production arrange the large number of energy production (See Appendix 1). However, this is a very huge risk from the energy security point of view because oil and gas belong to exhaustible energy resources. The oil and gas reserves impact to production process in Azerbaijan. According to the U.S Energy Information Administration<sup>2</sup> report, Azerbaijan oil reserves were estimated at 7 billion barrels and natural gas reserves 35 trillion cubic feet (Tcf) as of January 2014. In comparison 2014 with 2010 the oil production decreased from 50 thousand to 42 thousand ton. The oil production is also huge risk from energy security point of view. The

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<sup>1</sup>[http://www.stat.gov.az/source/balance\\_fuel/indexen.php](http://www.stat.gov.az/source/balance_fuel/indexen.php)

<sup>2</sup> <http://www.eia.gov/beta/international/analysis.cfm?iso=AZE>

decreasing process of oil production related to crude oil price and at the same time reserves. The production of crude oil also impact to the oil revenue to the country. According to appendix 1, from there clearly seen that the production of crude oil decreased to 70.8% from 76.6% in the period of 2010-2014. In the result of such a production the investment on the energy and fuel complex is also decreasing.

## *2) Security of oil and gas pipelines*

One of the important thing in the energy security area is security of the oil and gas pipelines. This is common with the EU energy security strategy. The geographical situation of Azerbaijan and the pipelines are risky. Oil and gas routes are laid on the territories to the conflict affected regions which impacts to the security strategy of oil pipelines. Currently Azerbaijan has 4 pipelines (Baku-Novorossiysk, Baku-Supsa, Baku-Tbilisi-Ceyhan, South Caucasus Pipeline) and the security of them is very important for the country. However, these pipelines have also risk in order to usage point of view. As known that, oil and natural gas are not renewable energy and unfortunately Azerbaijan will not be able to use the pipelines for a long time in terms of oil and gas reserves. However, after Azerbaijan can use these pipelines for transit issues. In this case Azerbaijan will shift from export country to transit country in the future. On the other hand, Azerbaijan not only exports oil and gas, but, at the same time, petro-chemical products.

## *3) Stability and efficiency of energy resources*

Stability and efficiency of energy resources is one of the main part of energy security strategy. The Country should use the energy resources effectively. The modernization of the oil and gas sector and the petrochemical industry, the diversification and development of the non-oil industry, the expansion of opportunities to use alternative and renewable energy sources impact to use the energy resources effectively. In January 2013, Azerbaijan announced to raise over USD 7 billion in alternative energy investments by 2020, and increase total renewable capacity to 2,000 MW or 20% of the nation's overall power needs<sup>3</sup>. This will help to the country create an excellent energy industry and at the same time will help to use the energy in effectively way. The borders of Azerbaijan also impact to security of pipelines.

## *4) Shortage of production of alternative energy resources*

As mentioned before country has a huge potential in order to using the alternative energy resources. The period of sunlight reaches 2500 hours in the Absheron Peninsula and Caspian Sea coast and reaches 2900 hours in the Nakhchivan Autonomous Republic. As for wind energy, the Absheron Peninsula and the Caspian Sea coastal areas, in the western part of Azerbaijan (Ganja-Dashkesen) and the Nakhchivan Autonomous Republic (Nakhchivan-Julfa) has great potential. There is a high potential for wind energy especially in the Absheron peninsula. The speed of wind changes between 3-7 m/sec in a year which is consider perfect for wind generators(See Appendix 2). However, the usage of alternative energy resources are not widespread like oil and gas. This is related to a lot of reasons. The share of electricity based on alternative energy resources in total production starting to decrease from 18.4% to 6% (See Appendix 3). Also investment on alternative energy resources will create a chance to establish new job places. From

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<sup>3</sup> <http://www.bloomberg.com/news/articles/2013-01-30/azerbaijan-plans-7-billion-boost-for-renewable-energy-by-2020>

other point of view, alternative usage of energy resources to help secure the long-term stability of electricity sector.

To conclude, Azerbaijan energy resources creates an opportunity to provide the domestic and foreign energy needs. The production of oil and gas to help the set up the sustainable economy. However, the oil and gas reserves, security of pipelines, development of alternative energy resources should be managed by the government in terms of energy security of the country. Azerbaijan should interest in exploration of new oil and gas well and usage the energy resources efficiently.

### **Give an insight of emerging energy security risks**

As mentioned before, the importance of energy resources for economic development and for ensuring the domestic needs are high. Economic development and social stability are highly depended on the energy security especially for the energy rich countries. Therefore, the energy security forms the economic stability from the long-term perspectives. In the globalization period the countries' economic strategy mostly related to the security of energy resources. Azerbaijan energy resources are very rich thus the energy security issues are the main aims for the energy policy. Considering the all researches and literatures on this issue, we are defining the emerging energy security risks in Azerbaijan as following:

#### *1) Sustainable supply of domestic energy needs*

As noted before, ensuring the domestic energy needs is one the main energy security principles. The gasification process takes the essential part in the process of ensuring the domestic energy needs. Currently on the basis of "State Program on the development of socio-economic situation of Azerbaijan's region for 2014-2018 years" and "State Program on the development of socio-economic situation of Baku city and its towns" gasification process is ongoing process. However, still Azerbaijan is not already provided with gas entirely. This is related to oil and gas sector and its problems which needs huge investment. According to the SOCAR reports<sup>4</sup>, the gasification percent reached to 89,8% including Baku which was 99%. The government trying to finish gasification process until 2018 in the basis of state program. The country should finish gasification process until 2013. However this process still linger on but expecting to finish this process till end of the 2015. However, current situation of crude oil price shows that the process could expand to 2016.

#### *2) Modernization of the energy infrastructure and efficiently usage of energy resources*

Energy sector needs a big investment in terms of modern infrastructure. Alternative and traditional energy resources are need modern infrastructure in terms of exploitation and ensuring of domestic needs. There are a lot of projects has already implemented on the basis of the state program on the development of fuel and energy complex of the Republic of Azerbaijan. New oil and gas industry field exploration, production, construction of hydraulic structures for the provision of gas expansion and reconstruction of the infrastructure of the farm system, and also a lot of works are under processing in order to development. Starting from the contract "Contract

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<sup>4</sup>SOCAR (The State Oil Company of the Azerbaijan Republic) - <http://www.socar.az/socar/en/company/about-socar/discover-socar>

of Century” more than 100 bln US\$ invested to the economy of Azerbaijan. 42 bln US\$ invested on the oil and gas industry which most of them was foreign investments. According to the annual report of Ministry of Industry and Energy the indicators of production of oil were perfect. As noted in the report, 42 160,7 thousands of tones oil had already produced against of prognosis 41 184,6 thousands ton. Renewable energy resources are also need to develop and to modernization. Azerbaijan is investing to development and production of renewable energy resources. According to the Renewable Energy Strategy for 2012-2020, targeting 20% of RE in electricity and 9.7% in total energy consumption.<sup>5</sup>

### 3) Security of the oil and gas pipelines

Security of the pipelines is the issue which concerns not only for Azerbaijan, but also for EU energy risk. This is a most important point in terms of delivering of energy resources. The largest oilfield in the Azerbaijan sector of the Caspian Sea is Azeri-Chirag-Deepwater Gunashli oilfield (ACG). Production started in 1997. The Shah Deniz gas field (SD), the largest gas field in Azerbaijan, was discovered in 1999. Another significant element of the energy infrastructure is existing pipeline system to export oil and gas reserves of the Caspian Sea to the international markets. The Baku-Tbilisi-Ceyhan<sup>6</sup> (BTC) pipeline (1,768km) carries oil from ACG and condensate from SD across Azerbaijan, Georgia and Turkey.

In general, the researchers admit that the hazard of a terrorist attack to the energy infrastructure is actual. The biggest energy infrastructures are an attractive places for terrorists. A few groups have already demonstrated their purpose and their aptitude to manage such attacks. The main terrorist figures have clearly indicated their idea to strike global energy markets. In August 2008 there was a burst at a pump station on the Turkish part of the BTC pipeline. Though the suspicions about the PKK's involvement in this occasion were high, the Turkish authorities have waived the terrorist nature of this incident. However, the potential risk of PKK terrorism cannot be completely excluded and raises the issue of the growth level of preservation of the BTC pipeline. This is a main export pipeline to transport Azerbaijan oil (and possibly some part of Kazakhstan oil as well in foreseeable future) to the European market. The terror attacks are not the only potential threat to the critical energy infrastructure in Azerbaijan.

Concentrate all the emerging security risk, the security of oil and gas pipelines, ensuring domestic needs and modernization infrastructure in terms of efficiently usage of energy resources are the emerging security risks. The country mostly turned to solve these problems and manage it efficiently. Azerbaijan needs to enlarge its relations with other countries in the context of security of pipelines and set up modern standards on the energy infrastructure. In order to use the efficiently of energy resources country should develop and invest on alternative energy resources. In the next sub-chapter we will describes the relation of Azerbaijan between EU and EaP countries in terms of energy security.

**Provide possible solutions and opportunities, including potential role of EU, EaP and other partner countries. What can be done to prevent key energy security risks?**

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<sup>5</sup>[http://eeas.europa.eu/delegations/azerbaijan/documents/page\\_content/2\\_-\\_jamil\\_malikov\\_-\\_re\\_strategy\\_in\\_azerbaijan.pdf](http://eeas.europa.eu/delegations/azerbaijan/documents/page_content/2_-_jamil_malikov_-_re_strategy_in_azerbaijan.pdf)

<sup>6</sup> [http://www.bp.com/en\\_az/caspian/operationsprojects/pipelines/BTC.html](http://www.bp.com/en_az/caspian/operationsprojects/pipelines/BTC.html)

According to the previous part, we mentioned about the country emerging energy security risks which some of them characterize common issue in the partnership with EU and EaP. Azerbaijan has a good relation between EU, EaP and other partner countries in terms of energy security. EaP countries and EU relation is going to be strong from the energy strategy point of view. 20/20/20 European directive has set up new method of approaching to energy strategies. It also highlighted the necessity to integrate EU Eastern Partner (EaP) countries into the European energy market with the ultimate goals of strengthening energy security through the diversification of energy supplies, addressing global energy and environmental challenges, promoting an efficient exploitation of domestic resources, and to develop energy sustainability. Azerbaijan is playing a major role in EaP and EU countries energy security. However, the security of energy is also important issue for Azerbaijan. Therefore Azerbaijan started to work on energy partnership since 2006 (Memorandum of Understanding aimed at strategic partnership in the field on energy signed between EU and Azerbaijan on 7 November 2006). Another document providing platform for partnership the Eastern Partnership declaration signed on 2009 17th of May. The same issue include to EU and EaP countries energy security. The Eastern Partnership Platform on Energy Security brings together representatives from the EU, Armenia, Azerbaijan, Belarus, Georgia, Moldova, and Ukraine to discuss ways to promote energy security, renewable energy, energy efficiency, and nuclear safety. It also discusses the construction of missing infrastructure links and ways to bring partner countries' energy-related rules more in line with EU rules.

So, we are defining the solutions and opportunities as following:

- a) Enhancing security of Azerbaijan transit and export pipelines network;
- b) Setting up energy infrastructure based on the modern Euro standards;
- c) Increase also the volume of fossil-fuel energy from Caspian Basin and Central Asia as transit country;
- d) Developing comprehensive energy demand management policy in Azerbaijan, in other word to reduce the demand;
- e) Increasing of usage of renewable energy resources;
- f) Diversify and security energy resources in the context ensuring of energy resources gradually

In the cooperation with EU and EaP countries Azerbaijan's role is very necessary for the energy stability for. TAP and Southern Gas Corridor projects are important oil and gas project in the European continent thereby its security is one of the most important issue in the context of cooperation. This cooperation highly impact to country in order to solve energy security problems in the context of based on modern standard and usage of practice.

### **Overview the country's experience and good practices in addressing the security problems**

Country relation with EU and EaP impact to address the security problems efficiently. In view of the fact that, the economy of Azerbaijan is prospered thanks to the energy sector, the country interested in development in this sector. However, the country can be one of the good

examples in terms of addressing the security problems. The Western countries are regarded Azerbaijan as one of the key guarantors of the security of its energy in the EU - has raised the level of strategic relations. As a result, as noted above, on November 7, 2006 between the Republic of Azerbaijan and the European Union signed a Memorandum of Understanding on energy issues of strategic partnership. In December 2013, the world's leading oil and gas companies and many European countries, according to "Shah Deniz-2" project, the production of natural gas, distribution and export of the signing of the final investment decision in the XXI century not only in Azerbaijan, as well as Europe and will play an important role in ensuring energy security of the world. "Shah Deniz-2" project, the South Caucasus pipeline across Azerbaijan and Georgia to expand the Trans-Asian and Trans-Adriatic gas pipeline will contribute to the implementation of plans for the construction of Europe and will open a new gas corridor. These issues show the Azerbaijan experience in the context of managing the security problems.

Fortunately, the country more interested in investment to the alternative energy resources. Azerbaijan has good renewable energy resources. The **wind**, which blows more than 250 days per year and may generate 2.4 billion kWh of electricity annually, is the country's preferred option because of its lower cost, environmental soundness and unlimited availability. Offering 2,400-3,200 hours of sunshine per year, Azerbaijan has also good potential for **solar** electricity and heat generation. Traditional energy resources are not renewable and current situation of oil and gas industry infrastructure are modern. Therefore, Azerbaijan is investing to the renewable energy resources. There are a lot of state programs and discounts for the entrepreneurship who wants to invest to this sector. The strategic direction which have already done are systemizing as following. One of them was signed in 2004 21<sup>st</sup> April "The state program on usage of alternative and renewable energy resources" which helped to develop and to use effectively the alternative energy resources. Another state program has signed in 2005 "State Program on the Use of Alternative and Renewable Energy Sources for 2005-2013, which led to the establishment of the State Agency on Alternative and Renewable Energy (ABEMDA) in 2009. One of the big investments on this sector is the Gobustan experimental polygon, which was launched in 2011 including 5.5 MW hybrid station and also dispatcher center. This polygon helps to provide solar energy to the Gobustan town.

All of these directions show that how Azerbaijan Republic is going to develop and investing in this sector as the main energy strategy. Azerbaijan experience can be new directions for our neighbor countries. These direction help to the country to secure the energy opportunities from long-term perspective. The strategies will also help to open new job places, to secure energy stability, to diversify economy and energy and to protect the environment.

### **PART III**

#### **What opportunities and perspectives does the strategy provide to address the energy security problems in Azerbaijan?**

Nowadays, reduction of oil and gas reserves, scarcity of alternative and renewable energy resources' production, security of oil and gas pipelines, decreasing investments on the energy

and fuel complex, diversification of energy industry, efficient use of energy resources, instability of energy industry are the main energy security problems of the Azerbaijan Energy System.

By analyzing the European Energy Union Strategy and the security problems of Azerbaijan, we can clarify the opportunities and perspectives, which can be addressed to the energy security problems in Azerbaijan. One of the main aims of Energy Union Strategy is the strong role of European Union in the global energy markets. According Energy Union Strategy, it is very important to mention that, European Union targets to make partnerships with countries, which are the producers and main countries for transits.<sup>7</sup>

Azerbaijan has a large potential for establishing renewable and alternative energy industry, but nowadays this industry is not developed so much. Most of regions of the country use oil and gas. Creation of alternative energy resources will contribute to the solving energy problem in the country. So, Europe can be a good partner for developing renewable and alternative energy resources industry for Azerbaijan. There are a lot of perspectives in this case, because nowadays Europe is still a leader in renewable and alternative energy. European Energy Security aims to develop renewable energy industry, to invest in other countries, to make new partnerships. Azerbaijan has good renewable energy resources.

Azerbaijan already has partnerships in this field. “A leader company of France – CNIM has won the tender with EUR 346 million for construction, establishment and operation of waste to energy plant for 20 years in Baku, in 2008 year. The capacity will be 500 000 tons of city solid waste. This plant aims to be the biggest plant in Eastern Europe, in this field.”<sup>8</sup>

Azerbaijan can benefit from the European Union R&D strategy, Innovation policy in terms of realizing innovation policies, which are underlined in the National Energy Strategy. Europe is very developed on innovation and Research and Development (R&D) case. If take account that Azerbaijan aims to develop alternative energy sector, then the practical experience of EU for researchers, competitiveness, innovation can help Azerbaijan to realize national policy.

### **What are the synergies in the strategy and Azerbaijan’s national energy policy?**

The synergies in the European Energy Union Strategy and National Energy Policy of Azerbaijan are the security of oil and gas pipelines, which are very important in terms of delivery oil and gas to Europe and the development of alternative and renewable energy resources.

If observe the renewable energy policies of the Europe and Azerbaijan, it will be clear that, Europe is more developed and the European countries aims to replace the energy systems maximally. Exactly, the goal of the National Energy Policy of Azerbaijan is also to develop alternative energy resources and completely meet the demand for electric power from internal resources and satisfy the demand for the energy services of the population. In this case, to attract new investments should be a priority for country.

The important and main directions of the European Energy Union Strategy are the directions mentioned below:

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<sup>7</sup>Energy Union Package, Brussels, 25.2.2015 COM (2015) 80 final, p. 6

<sup>8</sup>Azerbaijan: Alternative and Renewable Energy – A Business Perspective, Caspian Information Service, p.7; May 2013.

1. Solidarity and energy security;
2. Integrated energy market of the European Union;
3. The efficiency of energy, which contributes to the moderateness of demand;
4. Decarbonisation of the economy;
5. Competitiveness, Research & Development (R&D) and Innovation.<sup>9</sup>

National Energy Policy of Azerbaijan has some similarities with the union strategy, but also there are differences. According to own national energy strategy, Azerbaijan aims to provide the access of the country to the European gas market and to export Azeri gas to Europe, to increase the production of energy resources, to increase the share of alternative energy resources on the whole energy industry. Azerbaijan aims to ensure own energy security.

EU aims to provide their natural gas diversification, supply and sources. Azerbaijan is a good partner for EU for ensuring with natural gas and for carrying out the new gas projects like, Southern Gas Corridor project, TANAP, TAP. These projects are the dimension of EU for energy security and providing the European countries with natural gas.

Integrated energy market is an important issue for the European Union. In the national energy strategy, Azerbaijan also maintained European energy market as the target market for selling own natural gas resources, but there are some difficulties in this case, because Azerbaijan is not a member of the European Union. The core of the relationship between Azerbaijan and EU is the energy. Caspian region and especially Azerbaijan is an important partner for EU, on their natural gas market.

Decarbonisation of the economy and the development of alternative energy sector is also a priority for Azerbaijan, according to National Energy Strategy. This is close to the EU strategy for decarbonisation of the economy. The major tasks of the renewable energy security program of Azerbaijan are:

- to determine the potential of renewable and alternative energy sources for the electric power generation;
- to enhance the efficiency of the utilization of energy sources of the country;
- to enlarge the capacity of energy production by developing the alternative energy sources.
- to provide the creation of new jobs.

One of the key visions of Energy Union Strategy is focusing on Research and Innovation (R&I), development, which can be the driving force of the new strategy.<sup>10</sup> Today Europe is very developed on Research and Development case. Azerbaijan's national energy strategy implements innovation, research as a core of the development of energy sector in the country. But there are still a lot of challenges and problems in this sector.

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<sup>9</sup>Energy Union Package, Brussels, 25.2.2015 COM (2015) 80 final, p. 4

<sup>10</sup>Energy Union Package, Brussels, 25.2.2015 COM (2015) 80 final, p. 16

## **Describe the challenges and possible barriers**

Today Azerbaijan's role is becoming very important in the process of providing European countries with oil and gas and ensuring the future development of European energy strategy. Political situation between the EU and Russia, recent situation and events in Ukraine, internal demand of Europe to natural gas and oil enforces the importance of Azerbaijan as an energy partner for European Energy Union. The potential integration of Azerbaijan to the Energy Security Union is the top agenda today. There are a lot of adventures, possibilities and opportunities as it was mentioned above, but there are also some challenges and barriers in this case.

### **Challenges and barriers:**

- Russian influence;
- Nagorno-Karabakh conflict;
- Passive participation of Azerbaijan at European Eastern Partnership Program;

### **Russian influence**

After gaining the independence from Soviet Union, Azerbaijan has insensibly rebalanced the political and economic situation in the region and in partnerships with neighbors. When Azerbaijan became close to European countries, to make partnerships with them, also tried to be very attentive and to endanger own relations with Russia. This is one of the main barriers for Azerbaijan in terms of partnership with European Energy Security Union.

### **Nagorno-Karabakh conflict**

The conflict between Azerbaijan and Armenia over the Nagorno - Karabakh region is a big risk in terms of energy security and infrastructure. This can impede the future projects with western partners and hampers the foreign investments at energy sector. This is a barrier for Azerbaijan in terms of energy union and energy infrastructure security.

### **Passive participation of Azerbaijan at European Eastern Partnership Program**

Passive participation of Azerbaijan at Eastern Partnership Program also harms the possibility of integration of Azerbaijan to the European Energy Union. This is one of challenges and barriers. Active participation at Eastern Partnership Program and good relationships with EU can accelerate the integration of Azerbaijan to the Energy Union and it will help Azerbaijan to develop energy market. The 3<sup>rd</sup> platform of Eastern Partnership Program implements the importance of energy security and energy partnership.<sup>11</sup>

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<sup>11</sup> Eastern partnership: Platform 3, Energy Security and Eastern Partnership; Angela Gramada, p. 100

## **Conclusion and Recommendations**

Energy security is highly investigated issue in the Energy Union. The energy security is also necessary object in terms of rationally usage of energy resources. Generally Azerbaijan is known as oil exporter country in the world. This is related to its abundance of traditional energy resources. The Country has also enough potential alternative and renewable energy resources concerning on efficiently usage of energy resources. However, country has got a lot of problems in terms of ensuring the security of energy resources. Reduction of oil and gas output, shortage of production of alternative energy resources, security of oil pipelines, stability and efficiency of energy resources define the key energy risks in Azerbaijan. Reduction of oil and gas output will affect to the total production which is in the result the income from oil and gas export will decrease. Although having alternative energy resources the insufficient usage of them creates the misbalance between the efficiently utilization of energy resources. Security of oil pipelines is the main issue from the energy security point of view. The geographical and neighbor position of the country augments of the hazard of oil pipelines. In order to get the stability and efficiency of energy resources, country should diversify the usage of energy resources. Additionally, it is the necessary to invest and modernize the infrastructure in the energy sector for getting the productivity.

Energy security influences the economic development and social stability inside the country. Highly improved energy policy give an opportunity to manage the economy efficiently in the long-term. However, there are some emerging risks in the country. Sustainable supply of energy needs, modernization of the energy infrastructure and efficiently usage of energy resources and security of pipelines determine the emerging risks of the country. Supplying the domestic energy needs is the main part of socioeconomic stability of the state. As being the main issue in the domestic energy needs the gasification process is undermanaging. Until now the gasification process reached to 89.8% over the country. Also, modernization of the energy infrastructure is another emerging risk which influence to efficiently utilization of traditional and alternative energy resources. Country should try to invest in alternative energy sector concerning on the usage of them.

Partnership with EU and EaP countries forms the main principles of the energy security. In terms of big oil and gas projects county relationship is very necessary. Energy security of Azerbaijan is common with EU and EaP countries' energy security. Possible integration of Azerbaijan to the Energy Security Union creates a lot of opportunities and perspectives for our country. Energy Security Union aims to develop relationship with EaP countries on energy security, to continue bilateral work with EaP countries and the goal should be the diversification and the new approaches to other countries. Multilateral relations with the European Union include relations with institutions in EU, other EaP countries, EU member countries. It can contribute not only in energy security, also large range of other sectors. Future membership of Azerbaijan to the Energy Union contribute to solving energy security problems, like security of oil pipelines, construction and development of alternative energy stations, diversification of energy sector in the country. Security of pipelines is the common problem of Azerbaijan and European Union. EU is also interested in security of oil pipelines in Azerbaijan and cooperation with our country in this case. Construction and development of renewable and alternative energy

industry is a priority for Azerbaijan and EU can be a good partner, as a leader in the world in this sector. Azerbaijan already has agreements with some European companies at alternative energy sector, but future cooperation can enforce the development. I recommend speeding up partnership for energy security, future integration.

Azerbaijan National Energy Policy and European Energy Union has differences and similarities. Common goals, similarities can strengthens the development of partnership and solve main security problems. But there are also some barriers and challenges on partnership with EU for energy security and possible integration of Azerbaijan to Energy. Russian influence, Nagorno-Karabakh conflict, Passive participation of Azerbaijan at European Eastern Partnership Program - are the main problems and barriers for the possible membership of Azerbaijan to the Security Union.

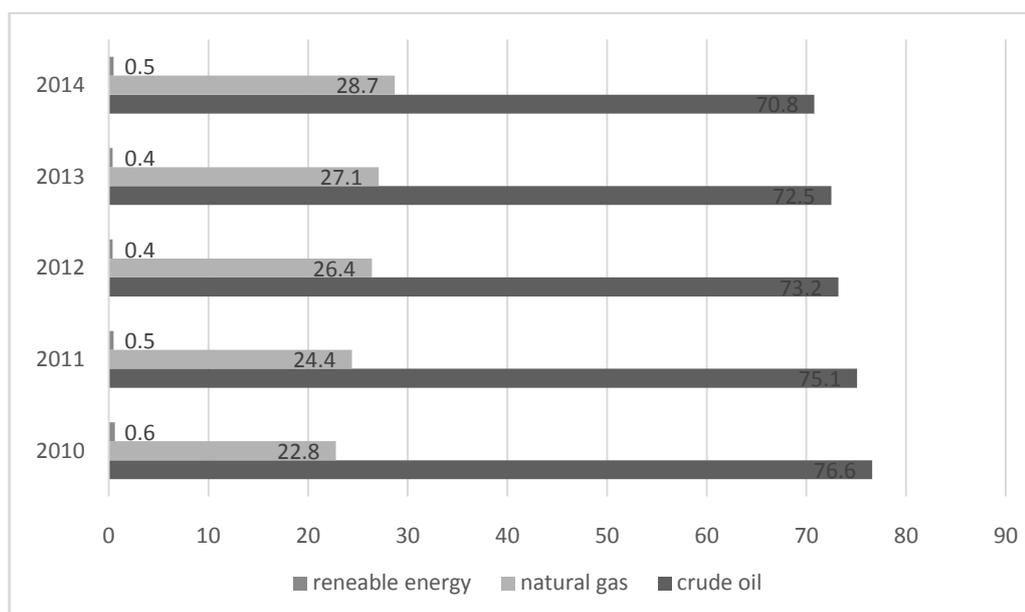
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## APPENDICES

### Appendix 1

**Figure1. Production of energy resources in Azerbaijan  
the period of 2010-2014 (in percent)**



Source: The State Statistical Committee of the Republic of Azerbaijan

### Appendix 2

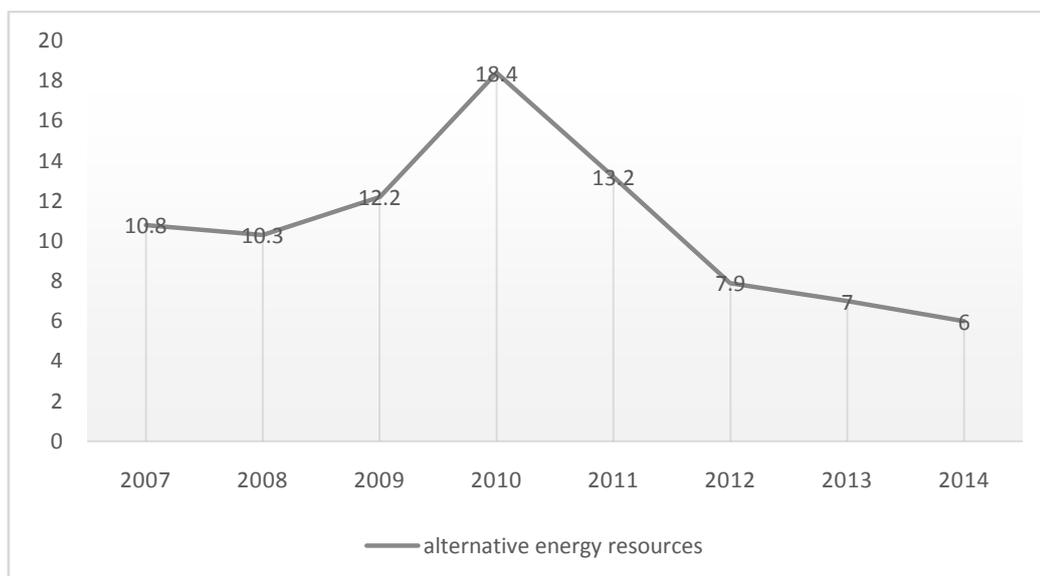
**Table 1. The indicators of renewable energy of Azerbaijan**

Types of energy	Power (MVt)
Solar power	>5000
Wind power	>4500
Bioenergy	>1500
Geothermal	>800
Small hydro power plants	>350

Source: State Agency on Alternative and Renewable Energy Sources

### Appendix 3

**Figure 2. Share of electricity generated based on alternative sources in total production of electricity(in percent)**



Source: The State Statistical Committee of the Republic of Azerbaijan

