

Wiesław LEWICKI¹

ENERGY INTEGRATION AS AN ELEMENT OF EU SECURITY IN A HISTORICAL OUTLINE

The civilization development in Europe significantly influenced the priorities when it comes to national security within European countries. The energy security became a valid aspect of properly functioning country. Europe, which fossil sources are limited, is forced to secure the sufficient amount of fossil sources supplies, that guarantees the energy security for EU countries. The key aspect seems to be the diversification of supplies, differentiation of energy balance through increased use of renewable energy sources and increasing the energy effectiveness. However, Russia which is the main supplier of the fossil sources to Europe is some extreme circumstances may become the main threat. Such complex security environment requires implementation of fully integrated internal market, that would be resistant to external threats, thanks to optimally planned distribution, regional cooperation and development of reverse flows infrastructure. The article is a synthesis of the current state and has the character of a historical analysis for which methods of analysis and criticism of documents were used.

Keywords: energy security, EU policy on energy, EU energy, EU-Russia relation, diversification of energy supplies, European common energy market.

1. INTRODUCTION

Energy was the main factor allowing prehistoric tribes to survive and develop. At first, energy was used mainly as a source of heat and light. Also, it provided a sense of physical security. Through the years, the importance of energy was growing and it was used by people much more often in everyday life. However, a great breakthrough could be observed in 20th century and the electricity became the main medium. The technological progress resulted in increasing the necessity for energy, which resulted in situation that energy sector became the most challenging and important in all countries around the world. Such situation changed the perception of energy security in EU countries. A limited amount of fossil sources forced EU countries to align with each other and as a result a common internal energy market was formed. In a creating process of the article, the author used the method of analysis and criticism of source materials, as well as the method of analysis and criticism of literature on the subject and provides a historical analysis of the European security energetic process.

¹ Wiesław LEWICKI, BEng., PhD, Rzeszów University of Technology, Department of security science, ul. Powstańców Warszawy 12, 35-959 Rzeszów; e-mail: wlewicki@prz.edu.pl. [ORCID: 0000-0002-8132-9945](https://orcid.org/0000-0002-8132-9945).

2. THE ESSENCE OF SECURITY

The issue of security has its beginnings as far as the first civilizations were sat. It was always an important element of people's needs. In general, the security is a state of calmness, it's a lack of threats and dangerous situations, which may influence on individuals or whole nations. The security guarantees confidence and possibilities to develop and improve it (*Słownik z zakresu bezpieczeństwa narodowego*, 2008). The definition of security has been changing over the centuries. As a result, a lot of different security branches were created, including energy security.

Analyzing security criteria a definition of "nation" must be discussed. According to Andrzej Czupryński "nation is a total amount of citizens living on a certain area, sharing the same language and cultural background. They have common political and economic interests. Nation is bounded by ethnic and cultural bounds, which are passed through generations. The sense of national identity is an effect of being a part of group which shares the same history" (Czupryński, 2015). The national security is often defined as a similar to country security. However, the nation differs from country. According to Andrzej Czupryński country is "a political, sovereign organization, which serves a particular functions and covers the community living in a certain area. The main aim of the country is to secure the national interests". The national security is responsible for being aware of potential threats and able to react in dangerous situations. Moreover, national security is obliged to provide a necessary means of surviving, provide stabilization and quality of life. All of those can be implemented by state institutions, which as political organization possess financial resources. The international security is defined as "protection of all nations and countries around the world from threats, development of countries. The international security is implemented by developing and creating national and international institutions, which are associated in one international security system". Summing up, the issue security is connected mainly with people, nations and the methods how to secure they needs, basic values, development and quality of life (Czupryński, 2015).

The issue security is related to the "issue" which is supposed to be secured and the methods how to achieve it. Such security creates a wide spectrum of means for security formation, which are still developed and increased in number (Czupryński, 2015). The energy security is one of the most crucial among all security branches nowadays.

3. ENERGY SECURITY

The energy is a factor which was present in people's life from the very beginning. Firstly, it was used to lit a fire in order to prepare meals. Together with civilization development the forms of energy use were increased and specialized. There are six basic changes in energy use over the centuries:

- Initial;
- Hunting;
- Early-agricultural;
- Late-agricultural;
- Industrial;
- Technological (Łęcki, 2015).

Each of this stages characterized in increase of the energy use. In the first stage the prehistoric human used 2 thousand kcal per day, meanwhile nowadays this amount has been

increased almost seventy times and it equals 150 thousand kcal per day (Łęcki, 2015). This factor clearly shows how consumption of energy was booted. The energy became the most crucial element of everyday life. Its maintenance and obtaining of the new sources became the priority to the whole world. The awareness of the importance of energy in proper functioning of countries, nations and institutions led to the development of new security sector which is called energy security (Łęcki, 2015). The general definition of energy security was defined in the Energy Security Law as a state of economy enabling covering the future needs for supplies of fuel and energy according to technical and economical possibilities, which must be environmental friendly (*Energy Law Act 1997* (Art. 3, No. 16). There are many definitions of energy security, which were named in different acts and laws, however, all definitions at first seems to be similar, many differ from each other in some aspects. Taking into consideration all known definitions, four main general aspects of energy security may be named:

- Minimization of the negative effects for environment;
- Balance between supply and demand for energy;
- Ability to cover the demand for energy;
- Introduction of economic mechanism allowing to improve the performance of energy market (Jankowska, 2015).

Each of those aspects are crucial for national energy security. If they are not executed it may lead to severe industrial, economic or social crisis.

4. THE EVOLUTION OF EU ENERGY POLICY

The first attempt to develop a common energy policy in Europe was made on 9th May 1950 in declaration called the Schuman Declaration (https://europa.eu/european-union/about-eu/symbols/europe-day/schuman-declaration_pl). Schuman presented a plan to form an international organization, which would take control over French and German production of coal and steel. Also, the organization was supposed to be independent form French and German governments. The idea allowed other countries to join the organization. On 18th April 1951 in Paris Belgium, France, the Netherlands, Luxemburg, Germany and Italy signed a treaty which resulted in forming The European Coal and Steel Community. The main reason for forming the community was to unite European countries economically and politically in order to secure lasting peace (Ruszel, 2016). The main pillar of the integration was the coal sector. In the 50s, almost 90% of energy was obtained from the coal. The ECSC was formed mainly in order to control the coal and steel sources and to develop a common market, which was supposed to secure ECSC countries with regular supplies. Also, it allowed to remove the duty and quantitative limitation (Nehrebecki, 2008).

A rapid development of ECSC countries resulted in the increase of energy supplies and fossil sources. Although, the coal was mined in Western Europe, the other sources such as liquid fuel had to be imported from other countries. Such situation forced ECSC countries to search for alternative energy sources. One of the main method was to invest in nuclear energy. In 1955 in Mesina all ECSC countries decided to create a committee that would be responsible for developing nuclear energy in Europe. The decision led to signing two very important treaties. In 1957 in Rome two new communities were established: the European Economic Community and the European Atomic Energy Community. They came to live on 1st January 1958. The main idea of the EEC was an enhancement in developing and inte-

gration of community countries, reinforcement of economic stability and creating a common market or free trade area. In order to fulfill those assumptions a number of tasks had been assigned, such as: reduction of duties between ECC countries, unification of duties for countries that didn't belong to community, free movement of services, goods and capital. Meanwhile, the main idea of EATC was a prompt development of nuclear energy, which was supposed to result in increasing of energy security and energy self-sufficiency of Community countries. It was assumed that nuclear energy as cheaper and more environmental friendly in comparison to other sources would play a crucial role in the future energy balance (Nehrebecki, 2008). However, soon it came clear that nuclear energy generated high cost when it came to electricity production. Another factor which seemed to be crucial was a conflict between France and EU Commission. France possessed a more significant technological potential when it came to nuclear production than other EU countries. This situation led to difficulties in reaching a consensus between EU Commission and France in terms of financial support. EU Commission was convinced that already known technological solution should have been improved, whereas France was more eager to invest in new more advanced technologies. Additionally, EU Commission considered the EATC as an instrument of West Europe countries' integration in terms of energy security, whereas French government tended to see it as way for financial and technological support for its own ideas. Those two different outlooks resulted in decreasing of the EATC's budget (Doliwa-Klepacki, 2005). Moreover, new sources of petroleum and natural gas were discovered. The import of those became more affordable and the nuclear energy declined in interest (Ruszel, 2016).

However, in the 70s, it came clear that import of cheap petroleum wouldn't last long. A huge demand for petroleum in Europe and the US led to the problems in supplies. In addition, the outburst of Arab-Israeli war in 1973 resulted in imposing an embargo on European countries and the US, which were in alliance with Israel. The embargo effected almost all world markets and led to a severe economic crisis. The petroleum crisis ultimately ended the era of carless petroleum use, also it showed how much EU countries depended on this source and how different were their priorities. This experience resulted in change of policy within ECC countries, the integration among countries became less important. Now, the individual countries security policies were seen as a priority (Bodio, 2009). This change was an impulse for establishing new law acts by the Council of the European Communities. The acts were supposed to secure the supplies of energy sources. However, the second petroleum crisis (1979–1980) became the fundamental for today's energy security in Europe (Ruszel, 2015). One of the main act was The European Act signed in 1986, it amended and supplemented the Rome Treaty. It obliged all ECC countries to establish one internal market, rationally use of the fossil sources and it changed the decision making method within the European Council (Bodio, 2009). Another document was so called "Green Paper" (The EU Council Working Document, (1998) **Internal energy market, COM (88) 238 final, Brussels**), it was prepared and enacted by the European Commission in 1988. The act highlighted the importance of one internal energy market, also, it presented the main reasons why European community still had problems with full integration. The Green Paper was considered to be the engine for all community counters (Nehrebecki, 2008).

The next years brought another acts which were supposed to enhance energy security in Europe. In 1991 the European Energy Charter was signed in the Hague. It was one of the most significant acts connected with the European energy security. It was signed by 46 countries. The document was a political and economic declaration, which was seen as an

opportunity for a more effective international cooperation within the energy sources supply sector (Nehrebecki, 2008). The next mile stone in the way of further energy integration was an act signed on 7th December 1992 in Maastricht known as the Treaty on European Union. The treaty was a breakthrough, because it officially declared the formation of European Union. Also, it defined the main aims, and introduced significant changes when it came to energy policy. Now, the energy policy was supposed to be based on different regulations, such as: the growth and development of trans European transmission systems (connecting already existing transmission systems in order to boost their competitiveness and effectiveness, investment in high-pressure gas pipelines to simplify the gas supplies from external markets). Moreover, rational use of European energy sources and introduction of renewable energy were seen as priorities (Nehrebecki, 2008).

The Treaty on European Union liberalized and liberated energy sector in Europe. The European Commission consequently implemented new policy through acts and bills. In 1995 the “Green Paper” was signed. The act became a pretext for a multi-month discussion over the main aims of energy policy. The long discussion resulted in signing the “White Paper”, which was fully devoted to energy policy in Europe. The White Paper listed the main energy policy targets, such as: energy security, economic competitiveness, continuous energy supply and protection of natural environment (Dobroczyńska, 2003). Subsequently, The EU Parliament and the European Council passed two directives: 96/92/WE (*European Parliament and the Council Directive of 19th December 1996 on common rules for internal market in electricity*) and 98/30/WE (*European Parliament and the Council Directive of 22nd June 1998 on common rules for internal market in natural gas*). The former was devoted to regulation within internal energy market, such as: effective management of energy production, transfer and distribution, the latter described spectrum of regulations within internal natural gas market (Nehrebecki, 2008). Overall objective of those directives was to continue and develop energy policy in Europe by opening of the market and unobstructed access to energy systems (Ruszel, 2015). In 2000, another important act was signed. The Green Paper *European Strategy for Energy Security*. The act enumerated the main threats connected with the fact that EU countries were more and more depended on external energy sources supplies, also it presented statistics that showed that European Union was the second energy consumer in the world. The document appointed strategic targets for energy security, such as: diversification of gas supplies, development of strategic gas reserves, balanced energy policy (*Common EU Gas Market...*, p. 73). The Green Paper resulted in new directives: “2003/55/WE (26th June 2003) connected with natural gas supply market repealing 98/30/WE (Directive European Parliament and the Council Directive of 26th June 2003 on common rules for internal market in gas) and 2004/67/WE (26th April 2004) devoted to measures to provide for gas supply security (Directive of 26th April 2004 on measures necessary to ensure the safety on gas supplies). Also, 1775/2005 Regulation passed by the EU Parliament and EU Council on 28th September 2005 connected with gas transmission systems conditions (European Parliament and Council Regulation of 28th September 2005 on requirements for gas transmission networks)”.

In 2006 the first gas crisis occurred, which resulted in cut-off gas supplies from Russia to EU countries. The cut-off was the outcome of the lack of agreement between Russia and Ukraine in terms of gas transmission costs. As a result, on 1st January 2006 Russian GAZPROM partly cut off Ukraine from gas supplies. This also affected EU countries, because a part of gas pipeline which led to EU was on the Ukrainian territory. The gas obstruction lasted only for few days, but it was strongly noticeable by all EU countries

including Poland. The gas crisis made EU governments aware of the fact that they became too dependent on external supplies. The EU organizations began to work on new projects, which were supposed to increase energy security. Finally, two new acts were passed: *the Green Paper European strategy for balanced, competitive and safe energy* and *statement European Energy Policy* (Ruszel, 2016). The former described EU priorities when it came to energy policy: constant development of internal electricity and gas market, supply sector security, reinforcement of EU countries solidarity, expansion of renewable energy sources, common external energy policy. The latter enumerated a number of challenges, targets, plan of action and measures used to implement energy policy (Ruszel, 2016). Equally, the third energy package was presented. The package assumed the growth in energy efficiency by 20%, the increase in the use of renewable sources by 20% and reducing CO₂ emission by 20% in 2020 (Ruszel, 2016). Additionally, in Lisbon in 2007 was signed a significant treaty. 27 countries declared that the European Union was due to be transformed into an unified international organization, also the competences of EU and individual countries were specified. The treaty was a mile stone for an internal European energy policy. The main targets of the internal energy policy were: ensuring the functioning of the energy market and security of energy supply, promoting energy efficiency, the development of renewable forms of energy and prompting energy networks (Ruszel, 2016).

Unfortunately, in 2009, the second gas crisis occurred. Again, it was a result of Russian-Ukrainian conflict. In November, 2008 GAZPROM requested from Ukraine to repay the debit of 2,4 billion dollars. Additionally, Russia accused Ukrainian NAFTOHAZ of trying to take over the gas pipeline leading to the EU countries. The accusation resulted in termination of the negotiation between GAZPROM and NAFTOHAZ, and on 1st January 2009 the gas transmission was fully cut off. A decline in gas supply level was noticeable in all European counters, including Poland. Thanks to increasing of gas transmission form Belarus and under the Black Sea, EU countries avoided being fully cut off form gas supplies. The negotiations between Russia and Ukraine was finished on 9th January 2009 and ratified on 12th January by all sides (*Common EU Gas Market...*, p. 68).

In 2014, another gas crisis happened and as the previous one, it was a result of Russian Ukrainian conflict. The main cause of 2014 crisis was the Russian gas price increase. Negotiations between both countries were long and tough, and they didn't solve the issue, so Ukrainian debt increased to 5,3 billion dollars. GAZPROM introduced pre-payment so when Ukrainian gas transmission was cut off, the EU countries wasn't affected by it. The negotiations lasted until October, 2014 when both sides reached the agreement (*Common EU Gas Market...*, p. 68).

The process of establishing a common energy policy in Europe was long and tedious. The main pillar of energy security was liberalization of internal market, protection and diversification of energy sources supply. Gas crises which occurred in last years, was a clear sign that there was many aspects that needed to be improved. Also, it was a main factor for more effective integration and cooperation between EU countries. It is worth mentioning, that apart from common European policy, the integration and cooperation is also visible in the individual countries. As an example, some energy companies lobby their interest in one country, but it may also affect the whole EU. The same situation may occur when energy companies try to influence on national politics in order to have an impact on political decisions. Such circumstances may lead to undermine integration and solidarity between particular countries (Ruszel, 2016). It seems that the most important challenge is connected

with the fully integrated internal market, better regional cooperation, development of transmission systems and infrastructure, which are they key for energy security.

REFERENCES

- Czupryński, A. (2015). *Bezpieczeństwo w ujęciu teoretycznym* [in:] Czupryński, A., ed., *Bezpieczeństwo. Teoria – Badania – Praktyka*. Józefów: CNBOP-PIB.
- Doliwa-Klepacki, Z. (2005). *Integracja europejska: (łącznie z uczestnictwem Polski w UE i Konstytucją dla Europy)*, Białystok: Temida 2.
- Dobroczyńska, A. (2003), red. *Energetyka w Unii Europejskiej: droga do konkurencji na rynkach energii elektrycznej gazu*. Warszawa: Urząd Regulacji Energetyki.
- Hajduk-Stelmachowicz, M., Stelmachowicz, M. (2015). *Efektywność energetyczna jako atrybut bezpieczeństwa energetycznego* [in:] Gędek, S., Ruszel, M., ed., *Bezpieczeństwa energetyczne na wspólnym rynku energii UE*, Warszawa.
- Jankowska, I. (2015). *Bezpieczeństwo energetyczne w polityce bezpieczeństwa państwa*, Sulechów: Wydawnictwo Państwowej Wyższej Szkoły Zawodowej.
- Kucharska, A. (2017). *Digitalizacja sektora energetycznego a potencjalne zagrożenia na przykładzie Niemiec* [in:] Gitling, M., Wojacek, I., ed., *Zagrożenia ładu społecznego oraz bezpieczeństwa narodowego. Wybrane aspekty*, Przemysł: PWSW.
- Łęcki, M. (2015). *Postrzeganie bezpieczeństwa energetycznego na tle wydarzeń XXI wieku*. „*Journal of Modern Science*”, No. 2.
- Majer, P. (2012). *W poszukiwaniu uniwersalnej definicji bezpieczeństwa wewnętrznego*. „*Przegląd Bezpieczeństwa Wewnętrznego*”, No. 7.
- Młynarski, T. (2015). *Odnawialne źródła energii w polityce energetyczno-klimatycznej Unii Europejskiej* [in:] Gędek, S., Ruszel, M., ed., *Bezpieczeństwa energetyczne na wspólnym rynku energii UE*, Warszawa: Rambler.
- Misiągowicz, J. (2018). *Strategia bezpieczeństwa energetycznego Unii Europejskiej* [in:] Gryz, J., ed., *Bezpieczeństwo energetyczne – koncepcje, wyzwania, interesy*, Warszawa: PWN.
- Nehrebecki, A. (2008). *Wspólna polityka energetyczna Unii Europejskiej*. Warszawa: Instytut Stosunków międzynarodowych.
- Rewizorski, M., Rosicki, R., Ostant, W. (2013). *Wybrane aspekty bezpieczeństwa energetycznego Unii Europejskiej*. Warszawa: Difin.
- Ruszel, M. (2016). *Polski wpływ na kształtowanie polityki energetycznej UE*. Warszawa: Difin.
- Kaczmarek, J. (2008), ed., *Słownik terminów z zakresu bezpieczeństwa narodowego*, Warszawa: Akademia Obrony Narodowej.
- Ruszel, M. (2015), red. *Wspólny rynek gazu Unii Europejskiej*. Warszawa: Rambler.

LEGAL ACTS

- Rozporządzenie Parlamentu Europejskiego i Rady z dnia 28 września 2005 r. w sprawie warunków do sieci przesyłowych gazu ziemnego.
- Dyrektywa Parlamentu Europejskiego i Rady Unii Europejskiej z dnia 19 grudnia 1996 r. dotycząca wspólnych zasad rynku wewnętrznego energii elektrycznej.
- Dokument roboczy Komisji Europejskiej, Wewnętrzny rynek energii, COM (88) 238 final, Bruksela 02.05.1998 r.
- Dyrektywa Parlamentu Europejskiego i Rady z dnia 22 czerwca 1998 r. dotycząca wspólnych zasad wewnętrznego rynku gazu ziemnego.

Dyrektywa Parlamentu Europejskiego i Rady z dnia 26 czerwca 2003 r. dotycząca wspólnych zasad rynku wewnętrznego gazu ziemnego i uchylająca dyrektywę.

Dyrektywa z dnia 26 kwietnia 2004 r. dotycząca środków zapewniających bezpieczeństwo dostaw gazu ziemnego.

European Commission, Communication from the commission to the European Parliament and the Council, European Energy Security Strategy, COM (2014)330 final, Brussels 28.05.2014.

Dyrektywa Parlamentu Europejskiego i Rady z dnia 22 października 2014 r. w sprawie rozwoju infrastruktury paliw alternatywnych.

Pakiet dotyczący unii energetycznej. Strategia ramowa na rzecz stabilnej unii energetycznej opartej na przyszłościowej polityce w dziedzinie klimatu, COM (2015) 80 final, Bruksela 25.02.2015 r.

Ustawa z dnia 4 kwietnia 2019 r. o prawie energetycznym (Dz.U. z 2019 r., poz.755)

Ustawa z dnia 11 stycznia 2018 r. o elektromobilności i paliwach alternatywnych (Dz.U. z 2018 r., poz. 317).

UE Energy in Figures Statistical Pocketbook 2018, European Commission 2018.

Sprawozdanie nt. europejskiego rankingu innowacyjności 2018 i innych inicjatyw KE związanych z innowacyjnością, Bruksela 30 czerwca 2018 r., Sprawozdanie nr 40/2018.

INTERNET SOURCES

<https://encyklopedia.pwn.pl/haslo/Traktat-z-Lizbony;4888929.html>

<https://publications.europa.eu/en/publication-detail/-/publication/99fc30eb-c06d-11e8-9893-01aa75ed71a1/language-en/format-PDF/source-79929745>

<https://inzynieria.com/wpis-branzy/rankingi/8/53253,50-najwiekszych-producentow-i-konsumentow-gazu-ziemnego-2017>

<https://encyklopedia.pwn.pl/haslo/wegle-kopalne;3995149.html>

<https://inzynieria.com/wpis-branzy/wiadomosci/9/48146,jakie-reaktory-jadrowe-wciaz-dzialaja-w-europie>

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Renewable_energy_statistics/pl#G.C5.82.C3.B3wne_ustalenia_statystyczne

<https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/energy-security-strategy?fbclid=IwAR3cVHoVY3Sv2-iEOXmArYHktstsJGHRxFc5NhwgvwcYW5KkXWKCxiS-bOd0>

<https://ec.europa.eu/energy/en/topics/energy-security/diversification-of-gas-supply-sources-and-routes>

<https://ec.europa.eu/energy/en/topics/energy-security/secure-gas-supplies>

https://eur-lex.europa.eu/legal-content/PL/TXT/?uri=LEGISSUM:1801_7

<https://powietrze.malopolska.pl/baza/elektromobilnosc-przyszloscia-transportu/>

<https://ec.europa.eu/jrc/en/news/e-vehicle-market-europe-slowly-gaining-momentum>

<https://www.rynekinfrastruktury.pl/wiadomosci/drogi/-polska-w-ogonie-rozwoju-elektromobilnosci-w-europie-kiedy-przelom-65982.html?fbclid=IwAR1qe8blVZPPwO4W-pCxMtCgvqNNQ5GHZmef-U83Jq8-h4JS4QTIJao40wg>

<https://www.youtube.com/watch?v=YuUIABqiTbw>

<https://zielonestrefy.pl/elektromobilnosc-w-polsce-i-unii-europejskiej/?fbclid=IwAR3RsaL8NXqstUGTfu3ddTPDZcFnbrBAaPC7qBwOIwnHtkYpofcWfVDTm5U>

<https://sjp.pwn.pl/slowniki/digitalizacja.html>

<https://www.iea.org/digital/#section-1>

<https://ec.europa.eu/digital-single-market/en/policies/digitising-european-industry>

<https://ec.europa.eu/digital-single-market/en/pillars-digitising-european-industry-initiative>

<https://www.cire.pl/item,175264,1,0,0,0,0,0,naukowcy-badaja-mozliwosc-wykorzystania-popiolow-do-absorbowania-co2.html>

<http://www.spalanie.pwr.wroc.pl/badania/witryfikacja/popioły.htm>

<https://nowa-energia.com.pl/2019/01/25/spotkanie-partnerow-projektu-coalbypro/>

<https://physicsworld.com/a/cold-case-of-cold-fusion-reopened-by-google-funded-scientists/>

DOI: 10.7862/rz.2019.mmr.20

The text was submitted to the editorial office: October 2019.

The text was accepted for publication: October 2019.

