Reinforcing the EU Energy Security by Strengthening External Cooperation

ALINA LIGIA DUMITRESCU
Ph.D., Centre for European Studies
Institute for World Economy of the Romanian Academy
Calea 13 Septembrie No.13, Bucharest
ROMANIA
alinaligia1@yahoo.com

IULIA MONICA OEHLER ŞINCAI
Ph.D., The New International Economic Order Department
Institute for World Economy of the Romanian Academy
Calea 13 Septembrie No.13, Bucharest
ROMANIA
oehler.sincai@gmail.com

Abstract: *This paper focuses on the course of action to strengthen energy security by expanding and diversifying economic cooperation and energy diplomacy in the EU in general and in particular in Romania. Romania has already taken important steps to integrate into the Energy Union which is taking shape, but it has to strengthen the external dimension of its energy policy by developing its energy infrastructure to step up regional cooperation with Central and Southeast European countries and also with other neighbours such as Moldova, Serbia, Ukraine, in order to diversify its export destinations. For Romania and the Republic of Moldova, the integration of the latter's energy market into the EU one, both in the gas and electricity sectors, is an economic and strategic priority at the same time. Romania could make more efforts to increase its energy security by extending its partnership network with major international market players, especially with the US and China, for the diversification of its energy mix.*

Keywords*: EU, energy security, external cooperation, regional cooperation*

Classification JEL*: F5, Q41, Q47, Q48*

1. Introduction

In February 2015, the European Commission launched the "Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Policy", which implies the achievement of specific objectives in order to reach the "fifth freedom" of the Union, alongside the free movement of goods, services, capital and labour. The EU strategic goals, which are considered to be the pillars of the energy union, are related to: competitiveness, security, sustainability, decarbonisation of the economy, energy efficiency and the external policy. However, energy security, closely linked to the external dimension of the Energy Union, is at the same time the most vulnerable component of this ambitious project, due to divergent interests and priorities among the EU Member States (Papatulică, 2016, Gurzu, 2015).

The foundations for such an ambitious project had been already laid during numerous previous initiatives, starting even with the Green Paper of November 2000, entitled "Towards a European Strategy on Energy Supply Security". More recently, the European Energy Security Strategy, launched in 2014, shortly after the Russian Federation's annexation of the Crimea, highlights a series of concrete targets, among which the following:

- increasing the degree of integration of the EU energy market through the *regional cooperation*;
- *reducing dependence on imports, in particular by certain external suppliers*, by building a strengthened partnership with Norway, accelerating the completion of the Southern Gas Corridor and launching a new gas terminal in southern Europe;

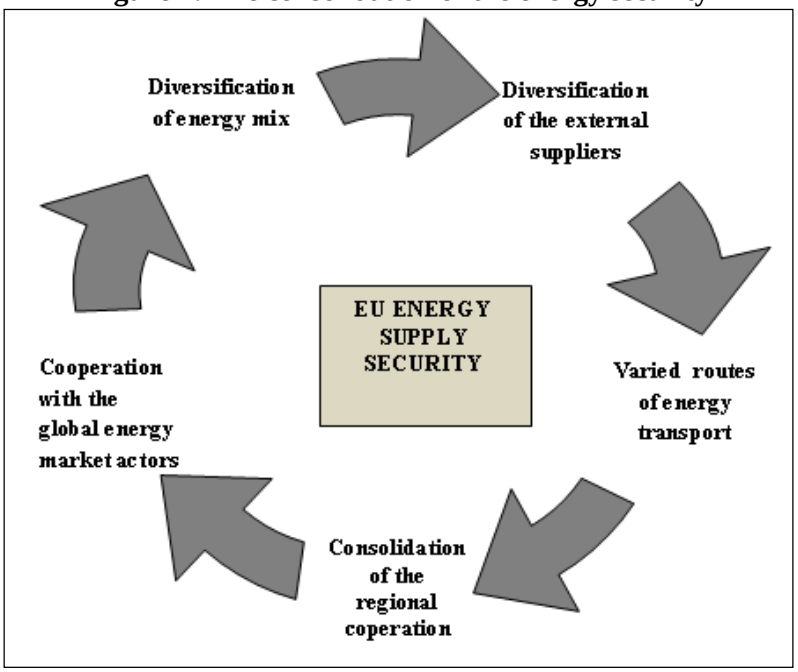
- reinforcing the energy security using the EU financial instruments for the period 2014-2020, but also as part of the Neighbourhood Investment Facility, under the projects carried out with the support of the European Investment Bank and the European Bank for Reconstruction and Development;
- Speeding up the coordination of national energy policies, including the energy mix, the energy infrastructure and the agreements with third parties.

On the 16th of February 2016, the European Commission presented the Sustainable Energy Security Package, reiterating the need to prepare the "EU for a global energy transition and disruptions of energy supply", in the circumstances in which "energy security is one of the cornerstones of the Energy Union strategy, which is a key political priority of the Juncker Commission".

As part of this package, the Commission presented concrete measures to strengthen energy security (figure 1):

- *the diversification of the energy sources, suppliers and routes;*
- *the moderation of the energy demand by increasing energy efficiency and using renewable energy sources* which will have a positive impact on energy security. The New Heating and Cooling strategy (having in mind that buildings and industry are consuming half of the Community energy) will focus on improving energy efficiency and renewable energy use;
- *"the transition from a national approach to a regional approach in order to develop the security of supply measures"* (through a new Regulation on security of gas supply);
- the new Decision on Intergovernmental Energy Agreements (Commission has to endorse the intergovernmental agreements of the EU Member States with third countries before signing them);
- the adoption of the *Strategy for Liquefied Natural Gas LNG* (as an alternative source of gas) and the storage of natural gas;
- the regulation of the security of gas supply by introducing *the principle of solidarity between Member States* in order to guarantee the energy supply to households and social services institutions, such as health care, if their supply is affected by a major crisis.

Figure 1: The consolidation of the energy security



Source: Elaborated by the authors on the basis of literature review.

As the European Commission itself points out, the gas supply crises in 2006 and 2009, which were caused by temporary disruptions of deliveries on the Russia-Ukraine-EU route, were an "alarm signal" that triggered firm concerns about reducing dependence on a single supplier (European Commission, 2014). The rhythm of these measures was accelerated with the tightening of relations with the Russian Federation following the Ukrainian crisis, and the "Great split" between the West and the East which occurred in 2014 has continued to have obvious repercussions on the EU energy policy. Therefore, energy security has gradually become the

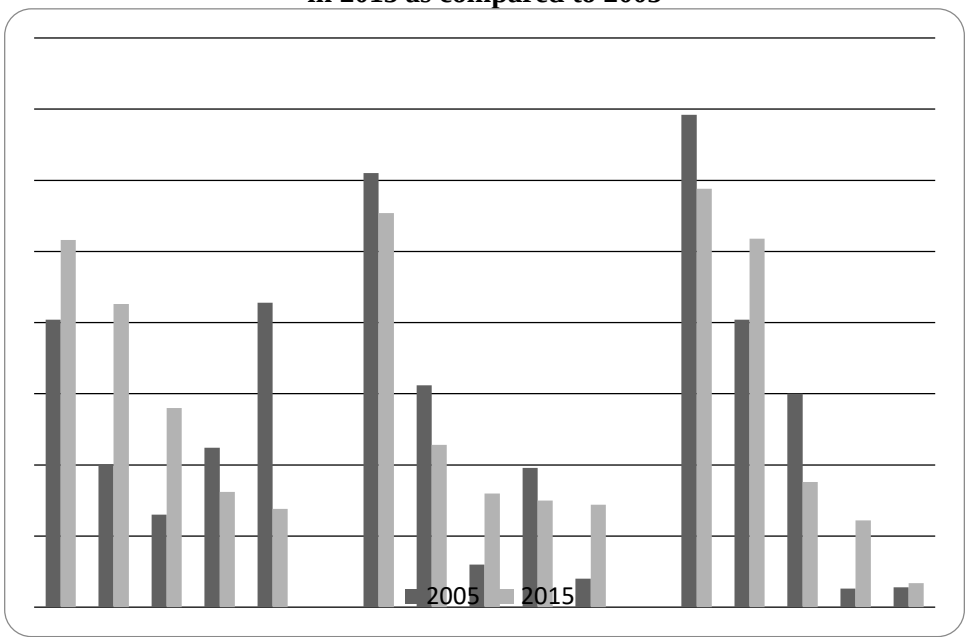
central element of the EU's energy policy, which is adjacent to other objectives (sustainability, competitiveness, efficiency).

2. The main energy security challenge: the dependence of a single supplier

The European Commission has published three different reports on the stages of development of the Energy Union in which it was highlighted that the main challenge to the EU's energy security is the high energy dependence on imported resources, as the community bloc imports more than half of the total primary energy consumed. According to Eurostat, the highest rates of energy dependence were registered for crude oil (88.8%) and for natural gas (69.1%), while for solid fuels it was 42.8% in 2015. Over the period 2005-2015, the EU's dependence on non-Community countries for the supply of natural gas increased by 12 percentage points, faster than the increase in oil dependency (by 6.4 percentage points) and solid fuels (3.4 percentage points).

Russia ranks first among the major external energy suppliers of the EU. In 2015, Russia continued to be the main source of extra-community imports, both for solid fuels, crude oil and natural gas. As regards crude oil, the share of imports from Russia was 30.5% in 2005 and it gradually increased to a maximum of 32.8% in 2011, and then dropped to 27.7% in 2015. Compared to the same period, there was a relatively slow decline in the share of crude oil imports from Norway, with a share of 15.6% in 2005 to 11.4% in 2015. On the other hand, Russia's share in gas imports of the EU-28 decreased from 34.6% to 26.8% between 2005 and 2010, but this trend was reversed and a relative peak of 32.4% was registered in 2013, after which the quota fell to somewhat below 30% in 2015. Norway remained the second largest supplier of EU for gas its share rising from almost one fifth (20.2% in 2005) to more than a quarter (25.9%) in 2015 (Eurostat, 2017) (Chart 1).

Chart 1: The main primary energy suppliers in the EU-28 (% of non-EU imports) in 2015 as compared to 2005



Source: Elaborated by the authors on the basis of Eurostat data.

3. Diversification of the suppliers and routes

Under these circumstances, if we look at the reality clearly expressed by the statistical data, the development of the external pillar of energy policy, which requires good cooperation with other states, is a complex process, which at the same time needs to be accompanied by a strategic vision to reduce both the EU's energy dependence on a major source and to ensure energy security by the diversification of energy routes and sources, and a very good bargaining capacity to achieve advantageous contracts and energy prices as competitive as possible.

3.1. Cooperation with Russia

On June 23, 2007, in order to diversify transport routes, Russia launched the **South Stream project**. The pipeline was estimated to have a length of 900 kilometres across the Black Sea, where it once branched northwest to Austria, then to the south, to Greece and Italy.

On April 17, 2014, immediately after Russia's annexation of Crimea, the European Parliament adopted a resolution on the rejection of South Stream and the shaping of other alternative sources of gas supply. Subsequently, in December 2014, Russia announced its abandonment of the South Stream gas pipeline project through Bulgaria, Serbia and Hungary, Slovenia, Croatia, Austria in favour of the Turkish Stream project, which envisages the construction of a Russian gas pipeline to Turkey via the Black Sea by the end of 2019. Thus, a new energy hub will be built at the border between Turkey and Greece, whereby the EU will be able to supply gas.

On the other hand, another initiative to diversify transport routes has been functional as since the implementation of the Nord Stream project on 1 November 2011 (Line 2 has started operating since October 2012), the pipelines have carried out the transport in a reliable, safe and uninterrupted manner. After six years of operation, a new benchmark was reached in November 2017 - delivering a total volume of 200 billion cubic meters. By the end of 2017, the total volume of gas transported to the European Union reached 205.3 billion cubic meters. In 2017, the Nord Stream pipeline provided 51 billion cubic meters of natural gas to EU consumers. This means that the pipeline system operates at 93% of its annual projected capacity of 55 billion cubic meters.

At the beginning of November 2017, Nord Stream 2 received approval from the Stralsund mining authority in the German continental shelf area (equivalent to the German Exclusive Economic Zone - ZEE). This was a prerequisite for the Federal Maritime and Hydrographic Agency (BSH) to issue the construction authorization, which happened at the end of March 2018. With the exception of Germany the route will include Russia, Finland, Sweden and Denmark. It will have two stretches, each with a capacity of 27.5 billion cubic meters and is expected to come into service at the end of 2019.

There are divergent opinions on the need of the Nord Stream 2. Poland and the Baltic countries authorities are concerned about the increase of the energy dependence on the imports of natural gas from Russia. On the other side, the German federal government sees this as an economic collaboration or a business decision. Nevertheless recently a group of seven European parliamentarians and representatives from Bundestag have made public their opinion that the Nord Stream 2, "that could divide EU and the European energy policy solidarity principle". We should not neglect this idea as the corner stone of the Energy Union was based on the idea to reduce the dependence on the Russian energy imports and increase the EU energy security. Recently Wall Street Journal has reported that President Trump pressured Germany to abandon the Nord Stream 2 natural gas pipeline from Russia if it wants to avoid a trade war with the United States. Trump's strategy is to force Germany and other EU countries to buy LNG imported from USA which is quite expensive and is not competitive compared to Russian gas.

3.2. Consolidation of the regional cooperation

The *Southern Corridor* is a successful European Commission initiative to import natural gas from Azerbaijan and neighbouring countries, including Iran, to Southern Europe. The Southern Gas Corridor will total more than 3,500 kilometres and will allow the transport of over 10 billion cubic meters of natural gas per year from the Shah Deniz II deposit of the Caspian Sea to Italy and is expected to become operational in 2019-2020. Natural gas deliveries from Iran, which are now quite uncertain due to US's denunciation of nuclear deal and imposing sanctions to Iran, could increase the capacity of the project to 40 billion cubic meters per year.

Through the *Connecting Europe Facility*, the amount of EUR 174 million were allocated to finance the BRUA (Bulgaria-Romania-Hungary-Austria) gas corridor project. The implementation of this project will increase the energy security of the region starting with 2019 by connecting the South Corridor with the Central and Eastern European markets.

Enhancing energy *solidarity between Central and South Eastern European countries* through more cooperation under the Commission's initiative on energy connectivity in Central and South-Eastern European level (CESEC) plays an important role. This framework, which was launched in 2015, includes nine EU Member States: Austria, Bulgaria, Croatia, Greece, Hungary, Italy, Romania, Slovakia and Slovenia and eight Contracting Parties in the field of energy) and offers opportunities by strengthening solidarity and by providing a safer and more affordable source of supply for citizens and businesses across the region.

The priority natural gas projects within CESEC are: Trans-Adriatic pipelines (gas pipeline from Greece to Italy via Albania and the Adriatic); the interconnection between Greece and Bulgaria; the interconnection between Bulgaria and Serbia; strengthening the transport system in Bulgaria; the consolidation of the Romanian transport system (part of BRUA corridor); the LNG terminal in Krk, Croatia; and the LNG evacuation system to Hungary. Other possible projects include: a connection of Romanian offshore gas to the Romanian network and improvement of the national system; a new Greek LNG terminal; and the interconnection between Croatia and Serbia. It should be underlined that much of these initiatives have been already mentioned in the 2014 European Energy Security Strategy.

3.3. Cooperation with the Republic of Moldova

For both Romania and the Republic of Moldova, the integration of the Moldovan energy market into the EU market, both in the gas and electricity sectors, is an economic and strategic priority at the same time. Nuţu and Cenuşă (2016) stressed that "the diversification of the natural gas supply sources by connecting to the Romanian transport networks, the complete liberalization of the market, as well as the integration of the Republic of Moldova in the EU energy system, have been especially accentuated during 2010-2013 period, upon joining the Energy Community." This context favoured the inauguration of the Iasi-Ungheni gas pipeline in August 2014, an investment of EUR 26.5 million, about 80% of the cost being covered by the Romanian side and EU, and the rest by the Republic of Moldova. The actual pipeline transport capacity is 1.5 billion cubic meters/year, a volume of natural gas that could fully cover Moldova's consumption needs (excluding the Transnistrian region).

However, the volume exported from Romania through this pipeline in 2015 constituted only 1 million cubic meters or about 1% of the country's total consumption (excluding the eastern districts of the Republic of Moldova). Nuţu and Cenuşă (2016) pointed out that "the extension of the Iasi-Ungheni gas pipeline to Chisinau, where about 50-60% of the total imported gas in the Republic of Moldova, except for Transnistria, is consumed, is a fundamental issue in order to increase the economic interest towards the gas pipeline, but also to materialize the objective of diversification of natural gas supply sources and routes, which contributes directly to the energy security of the country and the region".

4. Cooperation with the main actors of the global energy market

4.1. Cooperation with USA

The EU and the US are key allies in the energy sector, too, the EU and the US share a common approach to the need to promote open, transparent, competitive and sustainable global energy markets.

The energy cooperation has been strengthened since 2009, with the creation of the EU-US Energy Council. Giuli (2017) stressed that the United States had always been a key actor as regards the European Union's energy security, being a supporter of diversification plans for gas supply. However the US is following its own national interest. During the election campaign, President Donald Trump stated that the US is moving towards "energy supremacy," which is a "strategic, economic and foreign policy priority." This goal is supported by the remarkable increase in US oil production (78.6%) and natural gas production (43%) over the last ten years. Reducing Russia’s role on the world energy market will be in favour of the United States and are there any guarantees that this will never resort to energy as an economic weapon?

In 2016, the US became the world's third largest oil producer, and the world's first natural gas producer. In July 2017, President Donald Trump stressed the role of the US at the Warsaw Initiative Summit, a forum for energy and infrastructure cooperation in Central and Eastern Europe, which aimed to stimulate the interconnectivity of gas supply in the region. President Trump highlighted the role that LNG could play to break Gazprom's dominance in Central and Eastern European markets, underlining that US LNG tanks have already arrived in the region. The first LNG tank from US arrived at the Polish terminal in Świnoujście in June 2017. Looking more closely at the terms used by President Trump in his Warsaw speech on energy cooperation, one may see that US is changing its strategic commitment to its allies towards an economic cooperation geared to the commercial dimension (Giuli, 2017).

In this context, the EU countries should ask themselves which are their own best interests and whether changing a significant supplier with another one at a higher cost is a good or a bad decision.

4.2. Cooperation with China

In line with the EU-China Energy Cooperation Roadmap (2016-2020), the perception that China and the EU might be competing in terms of access to foreign markets often hides their common interest in developing the renewable and alternative energy, and to "share" the technology to increase energy efficiency.

Kejun and Woetzel (2017) showed that in early 2017, China announced that it would invest $ 360 billion in renewable energy by 2020, and that it intends to give up construction of its 85 coal-fired power plants. However, while global demand growth is slowing, China's share in this demand is rising. By 2035, China could hold 28% of the world's primary energy demand, compared with 23% in 2017, while the United States could have only 12% by 2035, down from 16% today.

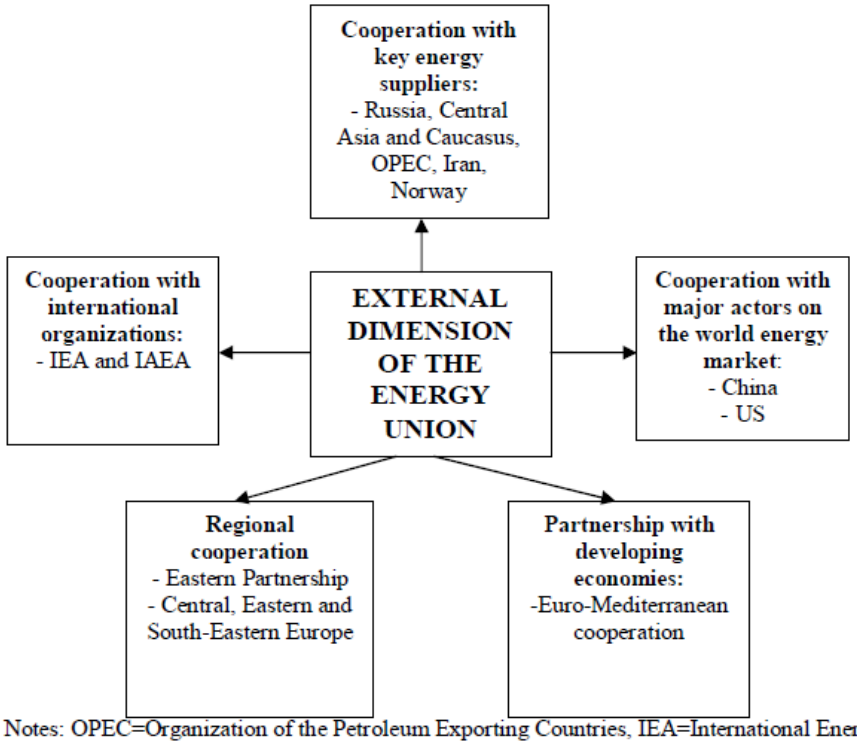
On the other hand, China is investing $ 32 billion - more than any other country - in the development of renewable sources abroad, with China's top companies being increasingly important in global renewable energy value chains. The state-owned company Grid Corporation intends to develop an energy network based on wind turbines and solar panels around the world. It is estimated that Chinese solar panel producers have a 20% cost

advantage over their US competitors due to economies of scale and greater diversification of the supply chain (Kejun & Woetzel, 2017).

Zhang (2017) underlines that "from an institutional perspective, there is still space for making further progress in the EU and China energy relationship". Zhang thought that "institutions are playing a crucial role in EU–China energy cooperation, and thus, the further optimization of this framework should be taken as one of the priorities for the two sides". In order to increase energy collaboration between EU and China, Zang suggested that "while the EU and China are trying to improve the institutions within the framework, they should also pay attention to the coordination with the institutions from other areas. The European and Chinese energy policy makers should always endeavour to make the institutions in their relationship be more representative, more pragmatic and more efficient".

The Figure 2 synthesizes the main components of the Energy Union taking into account relevant EU partnerships at present.

Figure 2: Components of the Energy Union from the perspective of the EU external relations



Notes: OPEC=Organization of the Petroleum Exporting Countries, IEA=International Energy Agency, IAEA=International Atomic Energy Agency.

Source: Elaborated by the authors on the basis of literature review.

5. Consolidation of energy security in Romania

Maroš Šefčovič, Vice-President of the European Commission for Energy, underlined during the September 2017 Energy Union tour that Romania can play a key role in energy security in the region, given its strategic position. Šefčovič considered that *the energy mix is well balanced and diversified*: most of the energy it uses is derived from petroleum products (27.6%, compared to 34.4% the EU average) and gas (27.1% versus 22% the EU average), followed by renewable energies (18.1% versus 13% the EU average), solid fuels (17.9% versus 16.1% the EU average) and nuclear energy (9.1 % versus 13.6% the EU average) in 2017. Compared to the EU's average energy mix, Romania's energy mix has a higher share of renewable energy and natural gas and a smaller share of nuclear and oil.

Romania also uses more renewable energy than the EU average and has already reached its national 2020 target for renewable (in 2015, 43.2% of the electricity was produced from renewable sources, of which 27.8% hydro, 11.1% wind and 3.35% solar energy). At present, Romania has a surplus of electricity that can be produced from renewable sources (Ministry of Economy, 2016).

Strengthening the external dimension of energy policy through the EU's macro-regional strategy for the Danube region in which Romania participates can be used as a basis for regional energy cooperation. The

European territorial cooperation - "Interreg" - within the framework of EU cohesion policy also offers new opportunities for cross-border, transnational and interregional cooperation, including in the fields of the Energy Union.

In the 2014-2020 period, approximately EUR 1.5 billion was absorbed for cohesion policy to increase energy efficiency in public and residential buildings, as well as high-efficiency cogeneration and urban heating, renewable energy and smart energy infrastructure in Romania. The European Regional Development Fund has also co-funded 111 energy efficiency improvement projects for apartment blocks in the country: over 41,000 apartments were heat-treated, resulting in total energy savings of 346 GW / year.

Romania could make more efforts in the direction of the energy security and energy diplomacy by developing collaboration with major international market players, both with the US and China, for energy mix diversification. The proposed direction of action could include: developing an energy hub in Constanta, but not focusing only on building a liquefied natural gas terminal in collaboration with American partners, having in mind the principle of diversification of import sources; working with China to develop a network infrastructure to allow renewable sources to develop and compete at the same level as traditional sources. Cernavoda's 3 and 4 reactors, the Tarniţa hydro station, the construction of a new group at Rovinari and the modernization of the Mintia Thermal Power Plant are among the large scale projects that the Romanian authorities negotiated with Chinese officials and that can be developed as part of the "Belt and Road" Initiative

Romania has taken important steps to integrate into the Energy Union, but it also has to work to strengthen the external dimension of its energy policy by expanding its energy infrastructure to step up regional cooperation with both Central and Southeast European and with Moldova, Serbia, Ukraine (diversification of export destinations).

Other important direction of action is developing the strategic energy stocks and providing extra balancing, reserve and storage systems systems. It is essential to develop additional storage capacities for natural gas. The stock of gas stored for the winter of 2017 reached 2.242 billion cubic meters in the seven existing Romanian deposits. The quantity means half of the total gas consumption in the winter months, which is 4.5 billion cubic meters, being insured from the stocks stored and from the daily production.

Romania has a very large potential capacity of underground storage of natural gas in depleted deposits, geographically spread over a wide area. PETROM-OMV did not carry out any underground gas storage, although it has deposits of exhaust gas or oil exhausted or semi-fuels.

In the field of electricity, one can mention the technical and technological modernization of the thermal power plants and especially of hydropower plants, like Vidraru, Stejaru, Mărişelu and Râul Mare, which are 40-50 years old. These bring together 1000 MW of the approximately 6000 MW of the production of the state-owned company Hidroelectrica, which provides the majority of system services.

Regarding the good governance of the energy sector, Romania will have to implement all EU legislation on the Energy Union, to elaborate as soon as possible the integrated national energy and climate plan (PNIEC) and the long-term emission reduction strategy but also other plans and strategies. Member States have to submit their first draft PNIEC in 2018 on the basis of a detailed content specification defined by the EU Regulation. The progress on meeting the energy targets for all five dimensions will be monitored regularly by the European Commission.

Romania’s energy strategy for 2016-2030 with the perspective of the year 2050 offers a long term vision in this field and underlines that in order to integrate into the Energy Union the partnerships with neighbours and also the complete implementation of the common rules are essential.

6. Conclusions

The development of the external pillar of energy policy, which requires good cooperation with other states, is a complex process, which supposes a strategic vision to ensure the EU energy security by the diversification of energy routes and sources. Only in this way it can be achieved a very good bargaining capacity to obtain advantageous contracts and competitive energy prices.

For Romania, the Energy Union means also the consolidation of its own energy security, which is a major opportunity. In spite of its advantageous geographical position and well balanced and diversified energy mix, the energy infrastructure needs constant improvements and also a better integration into the European one. Romania has to strengthen the external dimension of its energy policy by stepping up regional cooperation with Central and Southeast European countries, with other neighbours such as Moldova, Serbia, Ukraine, but also with key European and international actors such as the United States and China in order to diversify both its import sources and export destinations.

Note: The article is based on the results of the authors' research carried out as part of the study coordinated by Dr. Alina Ligia Dumitrescu and Dr. Petre Prisecaru on "The impact of new legislation on EU energy policy", included in the research program of the Romanian Academy in 2017.

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