Introduction

The energy sector is one of the key areas of EU-Ukraine cooperation. In 2013, Ukraine transported 83.7 bcm. of gas to 18 countries of Western and Central Europe, and now, despite decreasing of volumes of transit, still keeps its role of important gas transit route to the EU. After pause in 2014, Ukraine is planning to resume electricity export to the EU since the second quarter of 2016. Ukraine and EU countries are cooperating in the sectors concerning renewables, oil and gas development, energy efficiency.

For decades, Ukraine was dependent on external energy sources, mainly from Russia. In 2011-2013, Ukraine imported from Russia up to 92% of its gas supply, up to 100% of nuclear fuel, up to 40% of oil products. Such dependency was used by Russia as a weapon for political purposes, which became a very clear signal for Ukrainian politicians after the Revolution of Dignity to increase Ukraine’s energy independence and security. Since that time, speed and quality of implementation of EU legislation in Ukraine raised, and cooperation between Ukraine and the EU reached a new – more effective - level.

In 2015, Ukraine imported 63% of imported gas from the EU using reverse flow; share of import of oil products from Russia decreased to 20% of all import; and Ukrainian government is planning to import in 2016 more than 30% of nuclear fuel from other sources than Russia. There is no electricity import from Russia in the energy balance for 2016. The share of Russian energy resources is decreasing, which makes Ukraine closer to the EU market. The energy sector could be the beginning of real integration of European and Ukrainian markets that exists not only declaratively on paper, but in practice as well.

Legal basis of the EU-Ukraine cooperation

The Association Agreement focuses on reforms in Ukraine, in particular, in the energy sector. The Agreement provides for the exchange of experience between Ukraine and the EU. It also creates an early warning mechanism for accidents at energy facilities, solves issues caused by the Chernobyl catastrophe, shares statistical information between parties, co-uses of the infrastructure and so on. The Agreement

1 Creation market relations in energy sector of Ukraine: Report of the Minister of Energy to the Parliament about the first year of Minister’s activity.
2 Association Agreement between the European Union and Ukraine.
http://www.kmu.gov.ua/control/en/publish/article%3Fart_id=248279225&cat_id=248274610
requires the organization of transparent and competitive tenders in Ukraine and in the energy sector in particular, an effective public procurement system, an independent regulator in the energy sector, and transparency in the extraction of hydrocarbons. The Agreement references the treaty on the establishment of the Energy Community in EU-Ukraine cooperation, promoting trade and foreign direct investment in environmentally friendly goods, services and technology separately. Since numerous corruption schemes exist in the energy sector for illegal enrichment and money laundering (including abroad) the part of the Agreement on combating money laundering is also extremely relevant for the energy sector.

Besides the Association Agreement, EU-Ukraine cooperation in the energy sector is also fixed in the Treaty on the establishment of the Energy Community³, which Ukraine joined in 2011, and, according to which, the government should implement up to 15 EU Directives in the spheres of gas, oil, competition, energy efficiency, and environment. Every year Energy Community Ministerial Council makes decisions on implementation additional European legislation, which is obligatory for all Energy Community members. Energy Community is an effective platform for developing common policy on only between EU neighbors, but among the EU and its neighbors, and security of energy supply issues might be the first step in forming such common policy framework. In this regard, in July 2015 the Memorandum on the integration of the gas markets⁴ (July, Croatia) was signed, between the EU and Energy Community countries, which should boost security of energy supply and lead to the creation of a connected and competitive energy market in the region.

In regard to most of the areas mentioned in these agreements, Ukraine and the EU have already established effective cooperation for reforms in the energy sector. The progress of cooperation is annually evaluated in reports⁵ on the implementation of the Memorandum of Understanding on energy cooperation⁶ and in reports of the Energy Community⁷ regarding the implementation of EU Directives that Ukraine has to implement. In June 2015, Ukraine’s Minister of Energy Volodymyr Demchyshyn, turned to Europe with a proposal to update the concept of cooperation and speed up the process of integration even further along than envisaged in the Memorandum of Understanding signed between Ukraine and the EU in 2005, with the intention of beginning plans to include Ukraine in the Energy Union as a future full member.

A number of Ukrainian companies and Associations are members of the European professional networks. Ukrainian Nuclear Forum Association is an association member of FORATOM; Ukrainian gas transmission system operator, “Ukrtransgas”, is an observer in ENTSOG; Ukrainian Wind Energy Association is a member of EWEA; Ukrainian electricity transmission system operator “Ukrenergy” is affiliate member of EUELECTRIC. During 2015, a series of joint documents were signed on different levels, demonstrating the integration of the energy sectors in practice. In particular, the Memorandum on the

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⁶ Text of Memorandum of Understanding (ukr) http://zakon5.rada.gov.ua/laws/show/994_694
“Ukraine-EU Energy Bridge” between Energoatom and Polenergia International S.à (March, Kyiv), and agreements regarding interconnectors between Ukrainian TSO “Ukrtransgaz” and Hungarian FGSZ (May).

The EU also acts as a donor for carrying out reforms in Ukraine, in particular by providing grants, loans and macro-financial assistance, which was recorded in the Memorandum between Ukraine and the EU in May 2015\(^8\). Representatives from the EU serve as consultants for developing a new legal framework that meets all European rules. The Energy Community Secretariat, which co-operates with a number of ministries and agencies of Ukraine, assisted in drafting key legislation in accordance to the EU Directives. This includes a draft law on the gas market, which was adopted by the parliament in April 2015 as a Law\(^9\) and is fully compliant with the Third Energy Package. The Secretariat also helped in creating the draft laws on the national energy regulator and on the electricity market. The creation of the Support Group for Ukraine in the framework of European Commission, which also covers the energy sector, helped to improve communication and therefore, cooperation between Ukraine and the EU in the energy sphere at the highest levels. Support and advisory assistance of Ukraine’s European partners helps to raise awareness about the standards of the EU energy sector among government officials, experts and journalists in Ukraine. It also frames discussions about reforms on a new, more qualitative level, and helps to better monitor the effectiveness of changes inside the country.

**Increasing energy independence in gas sphere**

After the Revolution of Dignity, Ukraine was once again faced with Russia using gas as an "energy weapon" for political pressure on the new leadership. The EU became a moderator for resolving the conflict, helping to launch reverse gas flows for Ukraine from EU countries in the summer of 2014, and facilitated the signing of the so-called “winter package” of Russian gas supplies to Ukraine in the autumn of 2014. Since this time, negotiations on Russian gas supply to Ukraine are held in a trilateral format in an attempt to prevent the Russian Federation's blackmail and manipulations, avoid possible corruption schemes, and ensure the fairest and most transparent rules for supplying gas to Ukraine and guarantee reliable gas transit to the EU.

Such format gave positive results. For comparison, during 2013-2015 Ukraine was still dependent on gas imports, and bought from abroad supplies for more than 50% of its gas consumption; in 2013, gas supply from Russia to Ukraine made up 92% of its total gas imports\(^12\). However, in 2014 this share reduced to 74%, and in 2015, to around 37%. During this time, Ukraine’s share of gas supply from the EU increased from 8% to more than 50%, and in this case Ukraine works not only with one particular gas supplier, but with several. The price of Russian gas was also changed favorably, and dropped from 337 US dollars for thousand cubic meters in the I quarter 2015 to 227 US dollars in IV quarter 2015\(^13\).

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\(^8\) Information of the Cabinet of Ministers of Ukraine on signing the Memorandum [http://www.kmu.gov.ua/control/publish/article?art_id=248019980](http://www.kmu.gov.ua/control/publish/article?art_id=248019980)


\(^12\) Data was taken from open sources, like publications from “Zerkalo Nedeli”, BBC in Ukraine, UNIAN, Ukrinform.

\(^13\) From the presentation of the Ministry of Energy and Coal Industry of Ukraine, December 2015.
The problem still exists in the possibility to establish free gas flow between Ukraine and other European countries, as Russian company Gazprom Export controls some information which should be exchanged between transmission system operators on the European market. To solve the problem, Ukrainian NAK Naftogaz Company initiated the trial in the Stockholm Arbitration in 2014, and expects its decision in the beginning of 2017\textsuperscript{14}. The decision in Stockholm Arbitration may also open the possibility to sing new contract on gas transportation through Ukraine and new agreement on gas supply from Russia to Ukraine.

The trilateral format of negotiations should become the basis for the transition to a new model of transporting gas through Ukraine. This means adhering to European standards that provide for the transfer of the gas entry point to the eastern border of Ukraine and include the direct involvement of the Ukrainian operator of its transport system with EU companies that purchase Russian gas.

### Decreasing energy consumption and improving energy efficiency

Ukraine still has great potential for energy saving and energy efficiency. While energy intensity in EU countries is around 0.27 kg of o.e./USD, in Ukraine it is 0.98 kg of o.e./USD\textsuperscript{15}. In November, 2015, the Ukrainian government adopted the National Action Plan on Energy Efficiency\textsuperscript{16} in accordance to the EU Directive 2006/32/EU, which aims to reduce energy consumption in the amount of 9% from average indicators of final energy consumption by 2020. In addition, the National Action Plan on Energy Efficiency sets up an interim goal to reduce energy consumption in 2017 by 5\%, and most promising in the speed of reduction will be the household sector. According to the Ministry of Energy data, energy consumption already is decreasing in Ukraine: in 2015, electricity consumption decreased by 12\%, gas consumption – by more than 20\% - in comparison to 2014\textsuperscript{18}.

![Image](https://tsn.ua/groshi/rosiya-vperto-blokuye-virtualniy-revers-gazu-do-ukrayini-kiyiv-chekaye-su dove-rishennya-585466.html)

Also, a law on energy service in public buildings\textsuperscript{19} was adopted in 2015. The law gives the possibility for extensive energy modernization of public buildings in Ukraine, of which there are now near 100, 000. According to the State Agency of Energy Efficiency, potential for reduction of gas consumption in the public sphere is up to 50\%, which is around 0.7 bcm. of gas annually\textsuperscript{20}. But this is only a beginning part of the changes that should be made in Ukrainian legislation in the field of energy efficiency. Additional primary and secondary legislation, like on energy labeling, commercial metering should be adopted as soon as possible as a part of Ukraine’s obligations in the Energy Community. Moreover, as a result of Energy Community Ministerial Council decision in 2015, a new Directive 2012/27/EU should be implemented in Ukraine, and this is one of the priorities for Ukrainian government for 2016.

Besides this, the Ukrainian government provided the possibility to get loans for energy efficient equipment and materials, part of which is compensated by the state. Many regions joined the program, covering part of the compensation. Shares compensated by the state are between 20\% to 70\%\textsuperscript{21}. More than 78 thousand households have already used this program, for the sum more than 1 bln. UAH\textsuperscript{22}. Among those

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\textsuperscript{14} Russia is blocking virtual reverse of gas to Ukraine // TSN news. - https://tsn.ua/groshi/rosiya-vperto-blokuye-virtualniy-revers-gazu-do-ukrayini-kiyiv-chekaye-sudove-rishennya-585466.html

\textsuperscript{15} Materials of Forum of oil and gas complex in Ukraine http://www.ngbi.com.ua/enef.htm

\textsuperscript{16} Text of the National Plan on Energy Efficiency (ukr) http://zakon5.rada.gov.ua/laws/show/n0001824-15

\textsuperscript{17} Information of the State Agency on Energy Efficiency (ukr) http://saee.gov.ua/uk/news/935

\textsuperscript{18} Data of the Ministry of Energy on Energy Consumption and Production in 2015.

\textsuperscript{19} Law on new investment possibilities, guarantee of rights and interests of entrepreneurs for energy modernization (ukr) http://zakon3.rada.gov.ua/laws/show/327-19

\textsuperscript{20} Information of SAEEE (ukr) http://www.kmu.gov.ua/control/uk/publish/article?art_id=248626600&cat_id=244277212

\textsuperscript{21} Report of the SAEE (ukr) http://saee.gov.ua/uk/news/943

\textsuperscript{22} Information of SAEE (ukr) http://saee.gov.ua/uk/news/957
households, more than 18 thousands are members of the program of subsidies. State Energy Efficiency Agency initiated signing Agreements with local governments, to make the loan program more popular in 2016.

Changing “rules of play” on Ukrainian energy markets

Ukraine's great "homework assignment" is the qualitative implementation of reforms that were launched in 2014-2015. This applies to reforms in all areas of the energy sector (coal, gas, electricity, energy efficiency), the creation of an independent regulator to ensure competition on energy markets, the promotion of energy conservation and energy efficiency through the use of new technologies, a more responsible attitude to energy consumption, and real steps in environmental improvement. A lot remains to be completed and bills that have yet to be put into law should be voted on and adopted without unnecessary delay. The laws that have already been adopted should be implemented in practice, creating an opportunity for fair rules, transparent pricing, and consumer protection.

In gas sector, after adoption of the Law on Gas Market in 2015, stable and fair rules of play should be established on practice. It includes possibility for gas import for all gas suppliers, creation open and effective platform for gas trade, establishing market based prices for all consumers, creation conditions for better investment climate in oil and gas production field. In addition, final decision on NAK “Naftogaz” unbundling should be made, to guarantee creation of independent transmission system operator and avoid possible monopolization on the market.

In electricity sector, a new Law on Electricity should be adopted, which was developed by the Ministry of Energy in partnership with Energy Community Secretariat. Also, a Feasibility Study on Synchronous Interconnection of Ukrainian and Moldovan Power Systems to ENTSO-E Continental Europe Power System should be finished, and next stage of joining Ukraine to ENSTO-E should be launched. In nuclear sector, further diversification of nuclear power supply is planned, in accordance to cooperation with Westinghouse Company.

Separate attention should be paid to the status of Crimea and electricity supply to this territory. Uncertainty of the international and state strategy of Ukraine concerning de-occupation of Crimea, and non-transparency in the process of signing contracts between JSC “Inter RAO” and “Ukrinterenergo” in December 2014 led to strong action. A public blockade of Crimea started in September, 20, 2015, blocking Ukrainian goods from entering Crimean territory. On November, 22, an energy blockade was added, caused by the undermining of power lines and leading to a complete blackout in electricity supply to Crimea. In December 8, supply was partially restored through the line “Kakhovska-Tytan”. Since January 2016, JSC “Inter RAO” and “Ukrinterenergo” is to sign a new contract for electricity supply, but the Russian side refuses to sign a document where Crimea is referenced to as Ukrainian territory.

Coal sector is still the most complicated for reforms and implementation of European principles. On the controlled territory, there are 85 mines, which is 57% of the total number, 35 of them are controlled by the government. During 2015, coal production decreased by 35%, in comparison to 2014. At the same time, import of anthracite coal was diversified – import from Russia decreased from 2 mln tons in 2014 to 628 thousand tons in 2015, and supplies from South Africa Republic increased from 376 thousand tons (2014) to 897 thousand tons (2015). The main problem still exist with salary payments to miners, the debts of the Government for 2015 is around 10% of the salary payments that should be paid. Ministry of Energy initiated development of the daft Law on Coal Market, to increase transparency and effectiveness of this sector.
A particularly crucial task for Ukraine is enhancing the transparency of the energy sector and the fight against energy sector corruption. The increase of prices and tariffs for power consumption should coincide with the increase of accountability of the Government and companies on the use of these funds, including infrastructure and service investments, etc. Increased transparency in the energy sector and reduced corruption are the best ways to restore public confidence in the government's policy in this sector, and to remove the tension and conflict between the public and the government that accompany reforms in the energy sector today. These are also important ways to fight populism in politics and speculation on energy pricing issues during elections.

A particular challenge in reforming the energy sector is the de-monopolization of markets and the creation of conditions for market competition. In this regard, the work of civil society activists, investigative journalists and deputies who deal with transparency and combating corruption issues is very important. During 2014-2015, the joint efforts of MPs, journalists and activists led to the unmasking of a number of corruption schemes in the energy sector and stopping them; at the same time, the results of official investigations are still unknown. The introduction of effective responses to identified corrupt areas in the energy sector should be one of the priorities of the Ukrainian government’s policy in the future, which is certainly related to the reform of the judiciary and the general prosecutor.

Having significantly activated cooperation in the energy sector in 2014-2015, Ukraine and the EU should maintain the high pace of energy cooperation in the following years, assisting each other in strengthening national and energy security, diversifying energy supplies, introducing new technologies and energy efficiency, as well as preserving the environment. For this to happen, close communication is necessary both between key stakeholders in Ukraine’s energy sector, and between Ukraine and the EU at all levels: political, social and business. The established networks should be supported by the Ukrainian and European sides for further mutually beneficial integration in the energy sector.

Qualitative energy reform is impossible without simultaneous changes in other sectors, including reform of the judicial system, prosecution reform, and overall civil service reform. Until all parts of the state machinery start running smoothly, it is difficult to talk about the success of a specific sector. The implementation of a more sophisticated system of electronic governance should be sped up. because the current system is outdated, slows down reforms, and uses governmental resources to implement procedural requirements, instead of developing actual reforms.

It is also necessary to establish platforms for expert and public discussions of the draft decisions in the energy sector, strengthen the influence of the public on decision-making, and improve the mechanisms of public control that should be enshrined in law. This includes promoting the establishment of interstate civil associations for constant communication of experts, lawyers, and specialists in public monitoring and control and stimulating international and national media and law enforcement investigations in the energy sector.

Based on the aforementioned, the EU-Ukraine Civil Society Platform,

- **Supports Ukraine’s and the EU’s aspiration for mutual integration of energy markets.** Creating a common European energy space is envisioned in the Association Agreement and the Protocol on Ukraine's accession to the treaty on the establishment of the Energy Community. A future single energy market will be the best guarantee for the national and energy security of Ukraine and the EU, and for the diversification of energy supply for both parties.
• **Supports EU-Ukraine negotiations on Ukraine's accession to the Energy Union.** The Ukrainian Government has already announced its interest in becoming a full member of the Energy Union in the future. Ukraine's inclusion in key activities and consultations of the Energy Union will help the parties understand each other's goals and objectives better, mutually assist each other in achieving these goals starting today, and form a united position on specific issues of international energy policy.

• **Supports the creation and implementation of a mechanism for stimulating investment from EU countries into the energy sector of Ukraine.** Cooperation between Ukraine and the EU, among others, should be aimed at developing a favorable investment climate in Ukraine on the one hand, and confidence of European companies in the Ukrainian energy sector on the other. If successful, the Ukrainian energy sector will receive reliable partners and responsible investors, and in turn, European companies will receive an opportunity for their own development and growth.

• **Supports the involvement of Ukrainian specialists, experts and public figures in working with European colleagues in the science and technology areas.** The signing of the Association Agreement opens up a range of opportunities in establishing contacts and joint realization of projects in energy, energy efficiency, and energy conservation. Creating new communication platforms and providing joint grants will become another level of integration between Ukrainian society and EU citizens.

• **Calls for an international investigation of the situation around effects of the Chernobyl disaster.** Cooperative efforts should be made in addressing issues caused by the disaster and in turning the ruined conversion unit into an environmentally safe system, working with spent fuel, and introducing an effective system of environmental monitoring.

*Calls on the EU:*

• **To help ensure the free flow of energy between Ukraine and the EU.** Interconnectors in the oil and gas sectors that will improve the energy flows between Ukraine and the EU are recognized as important projects at the Energy Community level. However, neither the Government of Ukraine nor the Energy Community are able to finance their implementation. Their inclusion in the list of common interest projects of the EU will allow Ukraine to attract the necessary funds for the construction of interconnectors.

• **To support Ukraine's aspirations to diversify energy supplies.** Looking for new sources of energy supply, the Government of Ukraine has developed a number of projects such as the construction of an LNG terminal, the implementation of the so-called "White Stream" (Azerbaijan-Georgia-Ukraine), and the creation of a gas hub in Ukraine, etc. EU's participation in the discussion of these projects and their support for projects in the future could ensure sources of diversification not only for Ukraine but also for other countries in Central and Eastern Europe.

• **To avoid implementation of energy projects, such as North Stream II,** which may decrease energy independence and become a threat for energy security for EU countries and Ukraine; moreover, North Stream II may work to break “one voice” principles in the EU foreign energy policy.
• To keep a common position with Ukraine on the energy supply of Crimea. In particular, Ukraine seeks the EU’s support in defining Crimea as Ukrainian territory in relevant agreements and contracts on energy supply, as this corresponds with the position of the international community and the Resolution of the UN General Assembly.

• To develop, in partnership with Ukraine, permanent, effective mechanisms for joint crisis-response in the energy sector. The EU’s participation in the tripartite talks on Ukrainian gas supply showed the effectiveness of Ukraine-EU cooperation in crisis situations. Continued cooperation of this kind is necessary and the mechanism of joint crisis-response to energy supply issues should be dynamic and coordinated in detail at all levels as possible.

**Calls on Ukraine:**

• To speed up the implementation of basic EU Directives in the energy sector. In particular, the government needs to adopt Law on Regulator and Law on Electricity Market under the Third Energy Package as soon as possible. It also needs to develop, adopt and implement technical regulations, construction codes and standards for improving energy efficiency, and using local and renewable energy sources. Finally, the government must support the implementation of various forms of public-private partnerships on the use of local and renewable energy sources, and rational use of energy (ESCO, BOT, BTO, BOOT, etc.).

• To enhance transparency and accountability in the Ukraine’s energy sector. This includes efforts to strengthen the transparency of public energy companies by publishing reports on their activities and audits. This also includes making the public the costs of the state budget in the energy sector (including the costs of the authorities working in the energy sector, grants, and government funding of companies). Laws should be adopted to ensure transparency of contracts in the energy sector, and to reveal the ultimate owners of companies operating in the energy sector. These steps will make it easier to investigate cases of corruption and bribery effectively, and make the government more accountable in its activities.

• To intensify activities in the field of energy efficiency. In particular, Ukraine and the EU should cooperate on the introduction of new programs to stimulate energy conservation and efficiency. The National Plan on energy efficiency should be implemented and thematic programs of cooperation between Ukraine and the EU on the rational use of energy and energy efficiency should be developed. The use of local and renewable energy sources should be supported, taking into account the principles of economic feasibility and environmental protection. Finally, Ukraine and the EU should cooperate on the development of alternative fuels, including sustainable production and use of biofuels and new energy sources.

• To provide, along with reforms, adequate consumer protection. A significant increase in prices and energy tariffs for the population living in difficult economic times requires special attention of the Government and Parliament to introducing a mechanism for real protection of the most vulnerable people, along with maximum transparency of prices, tariffs, and information on the use of funds from energy sales.