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UKRAINIAN PATH TO
EUROPEAN UNION.
THE POLISH EXPERIENCE

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REPORT

UKRAINIAN PATH TO THE EUROPEAN UNION. POLISH EXPERIENCE

ENERGY SECTOR

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Introduction

A full-scale Russian invasion in February 2022 accelerated Ukraine's efforts to join the European Union. The Association Agreement, which came into force in 2014, except for the Deep and Comprehensive Free Trade Area (DCFTA) enacted in 2016, formed the basis of Ukraine's preparations to join the EU. In June 2022, Ukraine was granted candidate status. In December 2023, EU leaders decided to start accession negotiations. Given Ukraine's intention to join the European Union, we would like to consider the experience of Poland and Polish entrepreneurs in practically implementing this membership. European Union regulations for new members are both a challenge and an opportunity. We believe that Poland's experience will be of great value to Ukraine due to the two countries' historical, social, and cultural proximity. The potential of the Polish economy, the Polish experience from the economic transition, and the construction of modern communications, energy, and logistics infrastructure are undoubtedly additional assets, also in the context of support for the implementation of EU regulations in Ukraine. Another issue is assessing Ukraine's ongoing economic integration with the Polish and EU market and the expected post-accession effects for both countries. Opportunities and challenges for cooperation and competition will be discussed, preparing partners for much closer economic ties soon.

This report was prepared as part of the project "Ukrainian Path to European Union. Polish experience.", carried out jointly by the Warsaw Enterprise Institute (Poland) and the Institute for Economic Research and Policy Consulting (Ukraine).

A key element of the project is expert seminars and sectoral reports. We want to focus on sensitive sectors of the economy that, on the one hand, may pose significant challenges as potential areas of competition and disputes between Polish and Ukrainian entrepreneurs, and, on the other hand, discuss those areas that can become a place of cooperation and mutual complementarity between the economies:

- energy;
- food and agriculture;
- road transportation;
- pharmacy;
- construction and building materials;
- timber and furniture industry.

Each sectoral report consists of two parts. The first deals with the Polish perspective on a respective sector of the economy, the impact of European regulations on transforming the sector, and recommendations for the Ukrainian side. The second part deals with the current state of the sector in Ukraine, the challenges posed by European integration, and prospects for cooperation between companies from both countries.

We strongly believe that our reports and the project as a whole will be an important voice in the discourse on Ukrainian integration into the European Union, provide the right knowledge, and help overcome mutual conflicts and misunderstandings. We want to convince everyone that entrepreneurs of both countries can and should work together to build the economic strength of our countries based on economic freedom and liberty.

Executive summary

Poland's energy sector primarily relies on fossil fuels, with 86% of its energy supply coming from these sources in 2022. Despite coal's significant role in electricity generation, its share is decreasing. Renewable energy, particularly photovoltaics (PV) and wind power, is rapidly growing. PV capacity has surged from 0.2 GW in 2016 to 16 GW in 2023, and onshore wind capacity stands at 9.4 GW. Poland also plans to develop nuclear energy, with intentions to build three large reactors and several small modular reactors (SMRs).

Ukraine's energy sector is more diverse, including natural gas, nuclear, thermal, hydro, and renewables. Nuclear energy is crucial, contributing 55% to electricity output in 2021. Ukraine also possesses substantial natural gas and oil reserves and is focused on maximizing domestic production to reduce reliance on imports. However, the ongoing Russian aggression has severely damaged energy infrastructure, leading to significant reductions in electricity production and consumption. Gas consumption decreased by 30% from 2021 to 2023 due to the war.

For potential cooperation, both countries, synchronized with ENTSO-E, can facilitate energy trade and enhance regional security. Building new interconnectors based on market demand and utilizing existing infrastructure is advisable. Ukraine's extensive gas storage facilities can be used by Poland for seasonal storage, and joint efforts in modernizing and expanding gas infrastructure could be beneficial. Sharing expertise in renewable energy technologies like PV and wind power, along with joint ventures in biomethane production and hydrogen energy, presents another avenue for cooperation. Poland's experience in promoting renewable energy and reducing CO_2 emissions could aid Ukraine in its rebuilding efforts.

In nuclear energy, Ukraine, with its established sector, can offer valuable insights to Poland, which is just beginning its nuclear development. Legislative harmonization between the two countries, aligning energy laws with EU standards, particularly in energy efficiency, renewable energy integration, and natural gas storage, is crucial. Ukraine can also adopt strategies from Poland to modernize its war-damaged energy infrastructure.

Joint research initiatives in new technologies for energy generation, storage, and grid management, utilizing EU funds for cross-border projects and technological innovation, are recommended. Ukraine should:

- accelerate its green transformation by developing a comprehensive National Energy and Climate Plan (NECP) aligned with 2030 Energy Community goals[1],
- harmonize its energy legislation with EU standards,
- nvest in modernizing nuclear power units,
- strengthen integration with European gas corridors,
- rebuild its energy infrastructure drawing on Poland’s experience and EU funding.

Initiating joint pilot projects in green hydrogen, energy storage, and other sustainable technologies, and promoting energy efficiency are also vital steps.

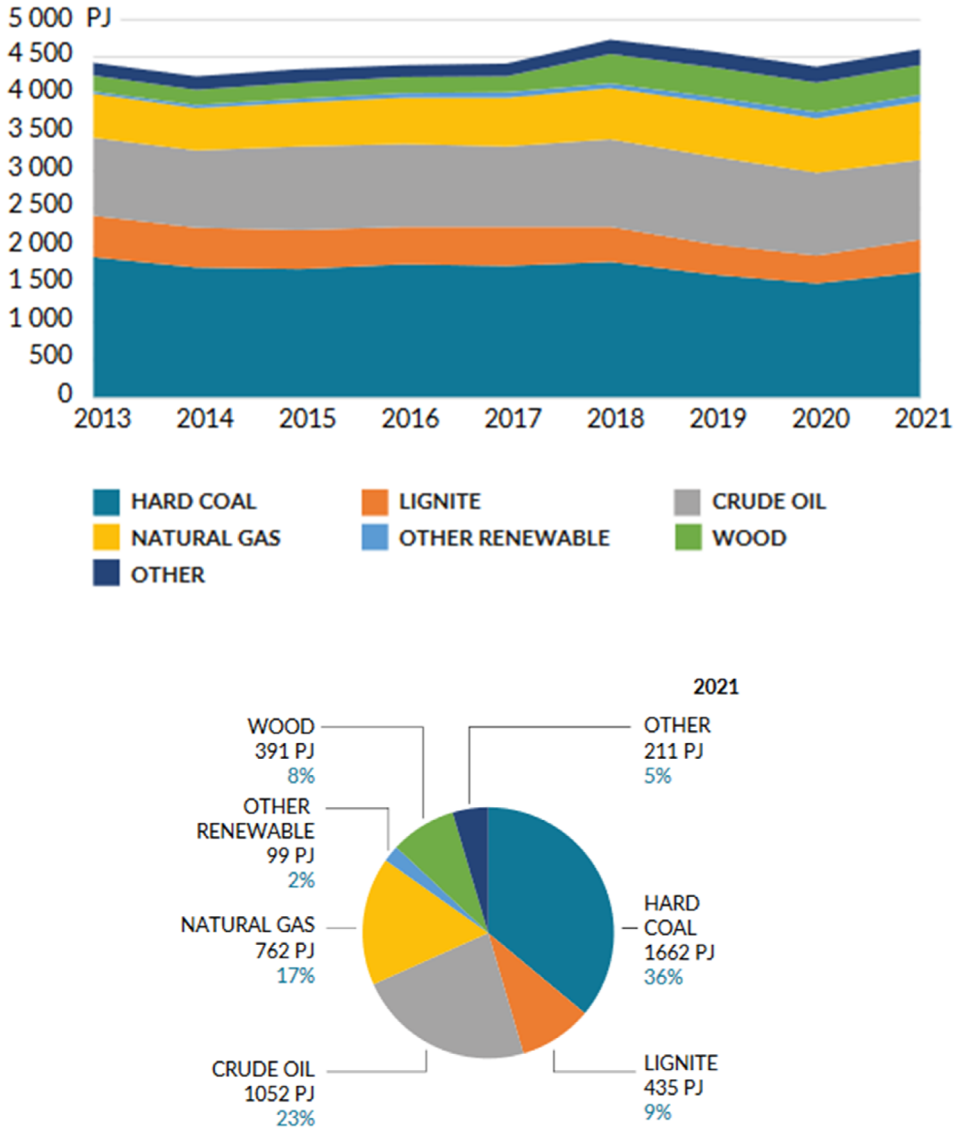
By leveraging the strengths and experiences of both countries, Poland and Ukraine can enhance their energy security, support sustainable development, and contribute to the broader European energy transition.

[1] Presented on 25.06.24.

1. Characteristics of the energy sector in Poland

The energy sector in Poland has been undergoing major transformations related to the ongoing energy transition and the evolution towards renewable sources. The rapid growth of RES capacity and the declining role of fossil fuels are causing significant changes in the production and demand structure. These changes are aimed at increasing efficiency and productivity and reducing negative environmental and climate impacts.

Graph 1. Structure of primary energy consumption (2021)

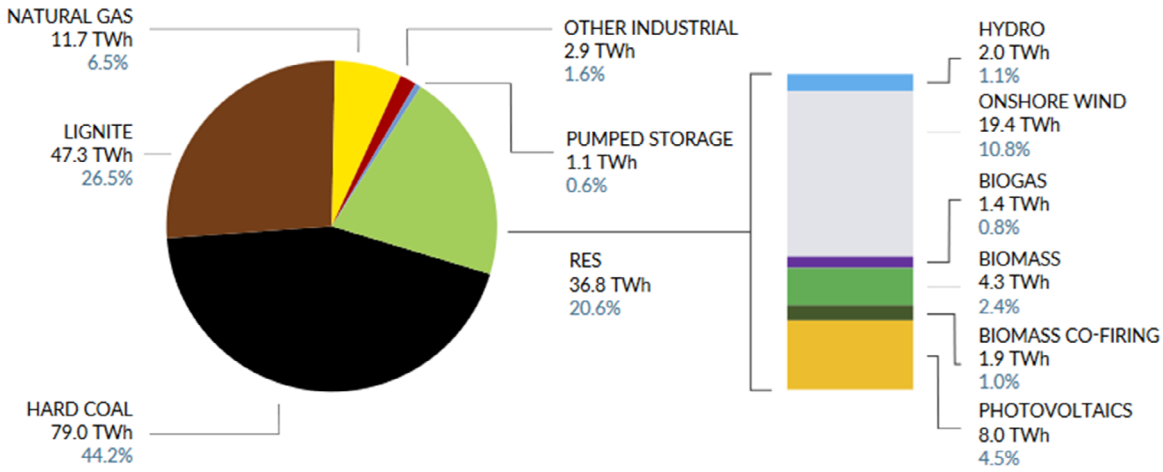


Source: Energy Transition in Poland, 2023 Edition, Forum Energii

The energy sector in Poland is characterised by a significant share of fossil fuels. Despite a gradual reduction in their consumption, they are still the dominant source of energy supply: 86% in 2022 (IEA)[2]. The share of coal in electricity generation has been gradually declining since the 1990s from around 90% to 62% in 2023. In contrast to other EU countries, the share of gas is relatively small (around 11%). Renewable energy sources have been developing dynamically in recent years. With government's support for photovoltaics (PV), Poland has become one of the fastest growing PV markets in the EU. From 2016 to 2023, PV capacity increased from 0.2 GW to 16 GW, mainly due to the deployment of small PV systems in residential buildings, but also auctions for large-scale PV farms. Onshore wind power capacity has also increased significantly and reached 9.4 GW by the end of 2023. Poland also has a well-developed strategy for the development of offshore wind energy, which according to signed agreements, is expected to reach 5.9 GW by 2027, with plans for at least 11 GW by 2040. New installations and services, i.e. battery energy storage and demand reduction services (DSR), are developing dynamically. Poland also has a capacity market, which provides the incentives for investments in the long term and ensured the construction of new 8 GW of gas-fired units.

[2] Comprehensive data on Polish energy sector: https://www.iea.org/countries/poland/energy-mix

Graph 2. Electricity generation in 2022



Source: Energy Transition in Poland, 2023 Edition, Forum Energii

Poland does not have nuclear power plants, although the project to build three large reactors in Pomerania region has significantly accelerated in recent years and is currently at the plant design stage by the US consortium Westinghouse - Bechtel. The planned commissioning date for the first unit is the mid-2030s. More than a dozen small modular reactor (SMR) projects are also being developed, although they are at an early stage.

The wholesale energy market is liberalised, with an energy exchange in operation since 1999, and players from many European countries are active. Ownership of electricity generation and wholesale and retail electricity sales is, however, highly concentrated, with four dominant state-controlled energy companies: PGE, Tauron, Enea, Orlen. Smaller private generators are also active, but their importance to the market is marginal.

Gas consumption has been increasing for many years, which has been linked to the commissioning of new gas-fired power plants, but also to changes in the heating of buildings and increased industrial activity. In 2023 gas consumption amounted to 17 bcm. Poland has fairly significant natural gas reserves of its own, with production at around 3.5 bcm per year. The remaining volumes are imported from Norway, Denmark and Germany and via the LNG terminal. As of 2022, Poland no longer imports gas from Russia. The domestic gas market is in the process of being liberalised, but still faces low levels of competition at the wholesale and retail level.

The markets for crude oil and petroleum products are liberalised, but there are challenges related to market concentration and limited competition. Poland has two large refineries (Plock and Gdansk) and several smaller ones, which almost fully cover domestic fuel demand. After the 2022 merger with Lotos and PGNiG, Orlen became a de facto monopolist in both the fuel and gas markets.

In Poland, heating sources, mainly in the form of coal, gas and biomass-fired combined heat and power plants, also account for a large share of energy production. However, the district heating sector, which supplies heat to homes and businesses, is in very poor shape and requires urgent changes towards modernisation and a change in the generation structure.

Poland has to import vast part of energy raw materials, its total imports amounted to PLN 193 billion in 2022. This represents an increase of 117% (PLN 104bn) to the previous year. Almost half of this amount (48%) consisted of natural gas imports (PLN 93 billion), and 38% was the cost of oil purchases (PLN 74 billion). The cost of coal imports amounted to PLN 26 billion, accounting for 13% of raw material import expenditure.

The challenges facing the transformation of the Polish sector are serious. There is an urgent need to change the generation structure, switch to low-carbon sources and improve the state of the grids. An important issue is to fill the coal gap created by the retirement of old coal units. The coal mining industry, which is permanently unprofitable, also requires further restructuring. The government estimates that modernising the energy sector and achieving the 2030 NECP targets will require €195 billion between 2021 and 2030 (around 3.5% of GDP per year), and that the costs of the energy transition between 2021 and 2040 could reach €350 billion[1].

[1] Polska 2022, *Przegląd Polityki Energetycznej,* IEA, https://iea.blob.core.windows.net/assets/310a49d2-771a-43f4-86b7-b935179b7c3f/Poland2022_Executivesummary_Polish.pdf

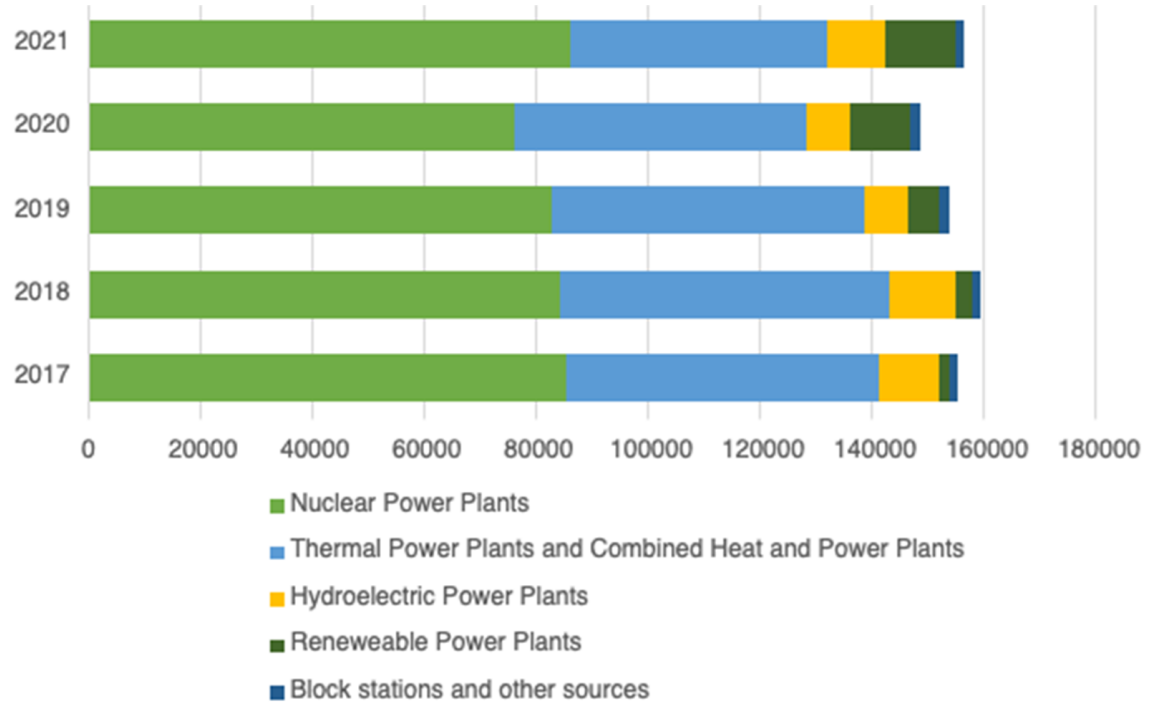
2. Characteristics of the energy sector in Ukraine

Ukraine's energy landscape is characterized by a rich tapestry of both traditional and renewable sources. With substantial natural gas deposits and a robust network of power plants, including nuclear, thermal, and hydro, the country has historically been an energy powerhouse[2]. Renewables such as solar, wind, and biomass have also started to play a significant role. In 2021, Ukraine produced 156.6 m MWh of electricity, marking a 5% increase over the previous year. Nuclear energy led the charge, contributing 55% of the total output, followed by thermal (29%) and hydro (7%). Notably, renewable sources and hydropower experienced the most significant growth rates, at 15% and 38%, respectively (Figure 1). In total energy generation mix share of coal was 23.6% in 2021, natural gas – 27.1%, oil – 17%, nuclear – 25.6%, renewable energy – 6.9%[3].

Ukraine possesses a rich mix of energy sources, including significant natural gas deposits, nuclear, thermal, and hydro power plants, as well as renewable energy sources like solar, wind, and biomass. This diversity is a strength, offering flexibility and resilience in energy production.

[2] https://ukraineinvest.gov.ua/en/industries/energy.
[3] https://www.iea.org/countries/ukraine.

Figure 1. Structure and volumes of electricity production in Ukraine, 2017–2021, million kWh



Source: Ministry of Energy of Ukraine

However, the Russian aggression caused a downturn. In 2022, due to Russian attacks and the occupation of the Zaporizka nuclear power plant, electricity production fell by 27.5%[4], a trend that continued into 2023 with a further 7% decline[5]. Nevertheless, almost 50% of all electricity was still produced by nuclear plants, 28% by thermal power plants and 14% by hydropower plants[6]. The total reduction in electricity generation is attributed to the devastating impacts of war, which has wrought considerable damage to the country's energy infrastructure.

The ongoing war with Russia has severely impacted Ukraine's energy sector, leading to a decrease in electricity production and consumption, the destruction of infrastructure, and challenges in energy trade. Despite these setbacks, the country has demonstrated remarkable resilience, working towards recovery and maintaining energy supply.

Electricity consumption patterns have shifted notably. In 2021, the industry was the largest consumer[7], but by 2022 and 2023, the population took the lead amidst a general decline in electricity use[8]. In 2022, the total consumption of electricity in Ukraine decreased by 31.5% which was followed in 2023 by reduction in electricity consumption by industry by 5% and by the population by 1.2%. This decrease aligns with the broader impacts of the war, affecting industrial activity and prompting energy conservation of war, which has wrought considerable damage to the country's energy conservation measures.

Ukraine's role in the international energy market has also evolved. Once an exporter, particularly to EU countries, the nation has seen a reduction in exports and imports alike. The war has necessitated a reevaluation of trade partners and routes, further complicating the energy trade landscape.

Since May 2021, Ukraine has stopped imports from Belarus and Russia. The EU countries became the main trade partners of Ukraine[9]. In 2022, exports after synchronization with ENTSO-E amounted to 2.6 m MWh compared to 3.5 m MWh in 2021[10].

The war has inflicted profound damage on Ukraine's energy sector, with direct losses estimated at USD 9 bn[11]. This includes the destruction of key infrastructure such as the Kakhovka HPP. Occupied territories have seen significant damage to solar and wind generation capacities, with a notable portion of energy resources now under Russian control or damaged[12]. During the two years of occupation, 150 gross operational violations were recorded at the power plants, including eight complete and one partial blackout[13].

Despite these challenges, Ukraine's commitment to restoring and expanding its energy capabilities is unwavering. Repair

4 https://www.facebook.com/olhabuslavets/posts/659273246208116
5 https://expro.com.ua/novini/energoatom-zaynyav-blizko-50-vd-zagalnogo-virobtku-elektroenerg-v-ukran-za-2023-r-
6 https://dixigroup.org/wp-content/uploads/2023/11/alert_distributed-gas-generation_dixi_group-3.pdf
7 https://interfax.com.ua/news/greendeal/790844.html
8 https://expro.com.ua/novini/-u-grudn-2023-r-naselennya-zblshilo-spojivannya-elektroenerg-na-11
9 http://www.atomforum.org.ua/news/2022/eksport_ta_import_elektroenergiyi_u_2021%20roci
10 https://mev.gov.ua/novyna/ukrayina-vidnovlyuye-eksport-elektroenerhiyi
11 https://kse.ua/ua
12 https://kse.ua/wp-content/uploads/2023/09/June_Damages_UKR_-Report.pdf
13 https://www.kmu.gov.ua/news/denys-shmyhal-ukraina-povynna-iaknaishvydshe-povernuty-kontrol-nad-zaes

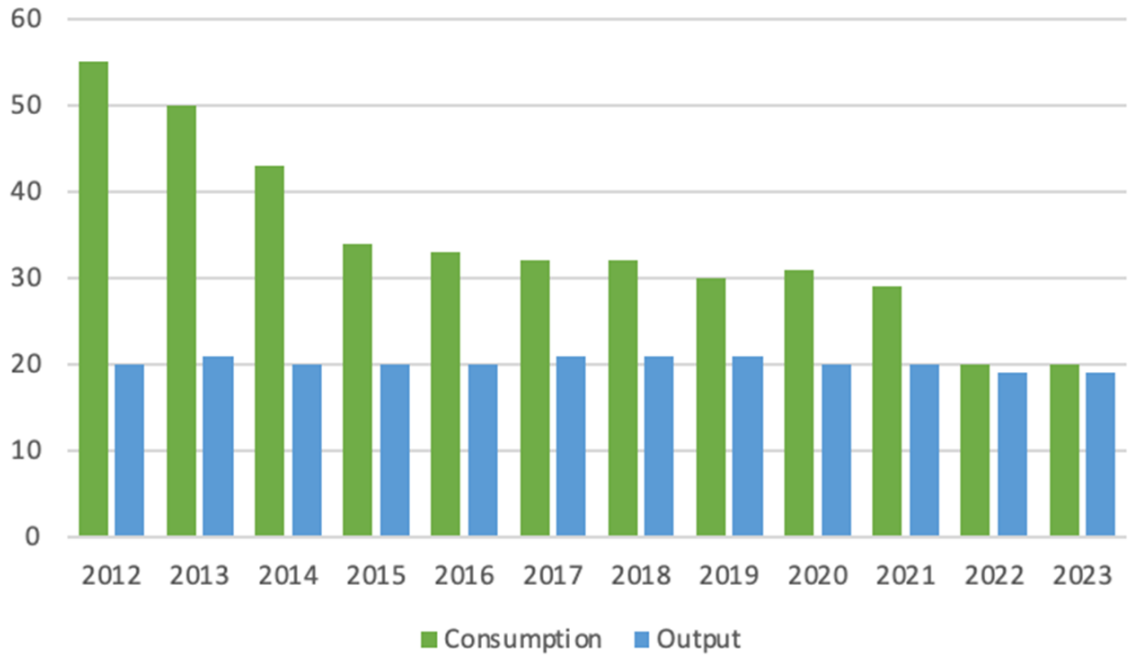
and restoration efforts have seen dozens of power units and transformer stations brought back online, and initiatives like the Tyligulska Wind Power Plant expansion underscore a forward-looking approach[14].

Ukraine's natural gas and oil reserves provide a cushion, yet the current geopolitical climate has forced a shift towards self-sufficiency. Ukraine boasts natural gas reserves estimated to last for 35 years and oil reserves sufficient for 47 years, underscoring a foundation of energy independence that few nations enjoy. Despite the bounty beneath its soil, the ongoing war has precipitated a strategic pivot towards maximizing domestic production and minimizing reliance on imports, especially in light of the prohibition on natural gas exports and the challenges of importing fuel amidst geopolitical tensions.

In 2023, Ukraine demonstrated its resilience by navigating the winter almost entirely on gas from its own production, a testament to its adaptive strategies in the face of adversity.

[14] https://dtek.com/media-center/news/dtek-tiligulska-ves--peremoga-na-energetichnomu-fro/

Figure 2. Gas consumption and output in Ukraine, 2012–2023, billion cubic meters



Source: ExPro Consulting

In 2023, the gas consumption decreased by 30% compared to 2021. 4.8 billion cubic meters or 60%, was lost by industry. The reasons for this reduction are the occupation of the territory, the destruction of industry, and the emigration (Figure 2)[15].

Ukraine also transits natural gas to Europe. In 2021, the volume of transit was 41.6 billion cubic meters (bcm). After the start of a full-scale war, the transit of Russian gas through the Ukrainian GTS fell by more than half - to 20.4 bcm in 2022. In January-July 2023, Russia delivered 8.3 bcm of gas to Europe via Ukraine. The gas supply contract expires at the end of 2024. Ukraine has announced that it will not conclude a new one[16].

Despite the challenges, Ukraine is laying the groundwork for a sustainable and secure energy future. This includes not only immediate recovery and repair efforts but also long-term strategies to enhance energy independence, diversify energy sources, and integrate with European energy markets.

Furthermore, the oil sector, while not as prominently featured in domestic energy consumption, has seen adaptive measures such as increased domestic production and diversified import sources to mitigate the impact of import bans from traditional suppliers. As Ukraine continues to confront and adapt to its complex geopolitical reality, its gas and oil sectors stand as beacons of potential energy independence and economic sovereignty, pivotal to the nation's broader strategic goals of resilience and sustainable development.

In 2021, Ukraine produced 1.65 m tonnes of crude oil. In 2023, Ukrnafta (the state-owned oil and gas company, which accounts for 86% of oil production) increased oil production by 3% compared to 2022 - up to 1.4 m tonnes[17].

At the same time, the consumption of oil is much higher than its domestic production. Fuel consumption in 2022 was 8.9 m tonnes. Consumption of diesel fuel decreased by almost 2.5 m tonnes compared to 2021 (to 5.6 m tonnes), gasoline – by a third (to 2.2 m tonnes), and liquefied gas – almost twice (to 1.1 m tonnes)[18]. The main consumers of fuel in Ukraine in 2022 were the military sector (37.6%) and agricultural companies (21.7%) (before the war it was the main consumer)[19].

In 2023, only two oil refineries were operating in Ukraine: Kremenchutsk and Shebelinsky. At the same time, Kremenchutsk is bombarded with rockets from time to time[20].

Currently, fuel is supplied from the south (Romania, Bulgaria, Greece) and from the Polish border (fuel from Poland and the Baltic Sea countries).

15 http://www.ier.com.ua/files/Projects/2024/MEMU/MEMU_March2024_230.pdf?fbclid=IwAR3OuaFUikEh7Da_yuukSI7jINJCeeu96HjLcPnoDKIQlloL3r1lvsaTk0A
16 https://www.slovoidilo.ua/2023/11/01/infografika/ekonomika/yak-zminyuvavsya-obsyah-tranzytu-rosijskoho-hazu-cherez-ukrayinu
17 https://www.ukrnafta.com/vydobutok-nafty-zris-na-3-gazu-na-6-u-2023-roczi
18 https://www.ukrinform.ua/rubric-economy/3803255-cogoric-v-ukraini-pocalo-zrostati-spozivanna-palnogo-ekspert.html
19 https://pro-consulting.ua/ua/pressroom/rynok-nefteproduktov-v-ukraine-osobennosti-potrebleniya-v-voennoe-vremya
20 https://www.epravda.com.ua/news/2023/11/1/706100/

3. Legal and organisational basis of the energy sector in European law

The legal and organisational basis of the energy sector in European law was established to ensure the functioning of the energy market, protect the environment and ensure security of supply.

European cooperation in the field of energy dates back to the 1950s when the European Coal and Steel Community and Euratom were established. However, the creation of a common European energy policy was not agreed until 2005 and formally implemented in the Lisbon Treaty, which entered into force in 2009. A separate Title on energy was then introduced in the Treaty on the Functioning of the European Union (TFEU)[21]. Article 194 TFEU brings certain energy policy areas under shared competence and sets out the objectives of EU energy policy:

- to ensure the functioning of the energy market,
- ensuring security of energy supply in the Union,
- promoting energy efficiency and energy savings as well as the development of new and renewable forms of energy,
- promoting the interconnection of energy networks.

Nevertheless, each Member State retains the right 'to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply' (Article 194(2)).

Since the early 2000s, EU legislation concerning the energy sector has changed significantly. Four energy packages have been adopted (1998, 2003, 2009, 2019), which have introduced liberalisation provisions, allowed for more fully integrated markets and significantly increased trade through market coupling processes. They also harmonised the conditions for energy companies to operate in a common European electricity and gas market[22]. In line with the third energy package of 2009, network codes and guidelines are being established and implemented with the aim of building a common, single European electricity and gas market[23]. The network codes introduce community arrangements for the market, system operation, capacity allocation, tariffs, connections. These provisions are intended to enable and facilitate the liberalisation of markets, as well as to contribute to the further development of competition and improve the standard of service and security of supply.

The third package also established the EU Agency for the Cooperation of Energy Regulators (ACER) responsible for coordinating activities between national authorities to promote a single and competitive energy market in the EU. The European Networks of Transmission System Operators for Electricity and Gas (ENTSO-E and ENTSO-G) were also established to coordinate the activities of transmission system operators to ensure the security and stability of the interconnected energy systems, the development and

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21 Consolidated version of the Treaty on the Functioning of the European Union, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT

22 On electricity market design: https://energy.ec.europa.eu/topics/markets-and-consumers/market-legislation/electricity-market-design_en

23 More at: https://energy.ec.europa.eu/topics/markets-and-consumers/wholesale-energy-market/electricity-network-codes-and-guidelines_en

planning of transmission networks, and the harmonisation of standards and procedures. The EU also supports the establishment of interconnections through various financial, regulatory and strategic mechanisms. The EU's flagship Connecting Europe Facility (CEF)[24] is the main financial mechanism supporting the development of cross-border energy infrastructure. The CEF allocates funding for projects to build new interconnectors, upgrade existing infrastructure and other investments to increase market integration in Europe. The EU has also established a legal and regulatory framework that promotes the development of interconnections. An interconnection capacity target of 15% of installed capacity has been set to increase market integration, which will improve energy security, competitiveness and efficiency in the EU internal energy market.

The EU's competencies and acquis has evolved considerably towards the requirements of climate policy, which has a direct impact on the operation of energy companies.

In addition, the Union has been undertaking a number of environmental and climate initiatives over the past two decades to address challenges such as environmental degradation and climate change. The EU's efforts in this area are aimed at reducing emissions of greenhouse gases and other harmful substances emitted by energy sector and promoting renewable energy sources.

The EU's competencies and acquis has evolved considerably towards the requirements of climate policy, which has a direct impact on the operation of energy companies. The two adopted energy and climate packages (2007 and 2014), and more recently the Fit for 55 package, include a number of provisions aimed at significant reductions in greenhouse gas emissions (the 2030 target is -55%), setting targets for RES (42.5%), energy efficiency, energy savings, various targets for sectors, heat, transport, hydrogen. The EU also adopted a legally binding target of achieving climate neutrality in 2050. The European Emissions Trading Scheme (EU ETS)[25], introduced in 2003, introduces the 'polluter pay' principle and aims to reduce greenhouse gas emissions in the industrial and energy sectors by trading emission allowances. It is a "cap and trade" system that is based on a system of allocation of emission allowances (EU Allowances - EUA), the amount of which decreases in successive years. Companies that emit less greenhouse gases than their allocated allowances can sell the surplus on the market, while those that emit more must buy additional allowances. In this way, the scheme encourages emission reductions by creating an economic incentive for companies to invest in more efficient technologies, reduce emissions and support renewable energy sources. The EU ETS is considered a key element of European climate policy, aiming to reduce the EU's greenhouse gas emissions in pursuit of climate neutrality in 2050.

[24] More at CINEA: https://cinea.ec.europa.eu/programmes/connecting-europe-facility_en
[25] Read more at: https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en

4. Impact of European regulation and practice on the energy sector in Poland

European regulations and legislation have a significant impact on the energy sector in Poland. As the EU acquis is part of Polish legislation, companies have to adapt their business activities and strategies in line with EU rules.

The first years of EU membership saw the liberalisation of the functioning of the energy market. The introduction of unbundling, i.e. separation of generation from transmission through the creation of independent electricity and gas transmission system operators. Utilities were restructured and split, as well as distribution system operators were created. In 1999, the Polish Power Exchange (TGE) was established, which enabled trade in electricity, gas financial instruments and CO_2 allowances. Its functioning contributed to promotion of competition and ensuring transparency and efficiency in energy and gas trade. TGE plays a key role in shaping energy prices and supporting the integration of the Polish energy market with international markets. In 2007, the principle of Third Party Access (TPA) was introduced, which allows the use of transmission infrastructure on equal footing. This rule is intended to create same conditions for all market participants and promote competition. Under the TPA principle, transmission network operators are obliged to grant access of their infrastructure on an equal, non-discriminatory basis to all interested parties provided they meet the technical requirements[26].

The EU's goals for reducing greenhouse gas emissions and developing RES are accelerating the energy transition towards a more sustainable and low-carbon energy system. This results in the need to reduce coal and gas in the energy sector and to develop alternative generation sources. Poland is obliged to increase the share of RES energy in its energy mix, which translates into relevant national legislation, eg. contracts for difference for RES generators.

[26] EU and Polish legal acts can be found at: https://www.ure.gov.pl/pl/urzad/prawo/ustawy

In addition, EU support through funds such as the European Regional Development Fund and the Cohesion Fund plays an important role in promoting low-carbon initiatives in Poland, grid development, support for energy efficiency and thermo-modernisation. Furthermore, EU environmental standards and regulations, together with financial assistance, are driving the development of environmental projects in Poland, affecting areas such as air pollution control and the fight against smog.

In the gas sector, Poland in recent years built connections with Denmark and Norway (Baltic Pipe), Lithuania (GIPL), Slovakia (GIPS) and the Czech Republic (Stork). These interconnectors proved crucial for the diversification of gas sources during the energy crisis and after Russia's supply disruption in 2022.

Poland, with the support of European funds, has also significantly improved its interconnections, which are key to integrating the Polish energy market with those of neighbouring countries and to enhancing energy security. In the electricity sector, the LitPol Link was built in 2015, connecting Poland with Lithuania. It is a 400 kV transmission line with a capacity of 500 MW, enabling the exchange of electricity between the two countries. LitPol Link is crucial for the synchronisation of the Baltic countries with the system of continental Europe. A second link to Lithuania, also supported by Brussels, is currently at the design stage.

In the gas sector, Poland in recent years built connections with Denmark and Norway (Baltic Pipe), Lithuania (GIPL), Slovakia (GIPS) and the Czech Republic (Stork). These projects are aimed at increasing transmission capacity between the countries and improving energy security in the region. These interconnections were made possible thanks to generous EU financial support. Their construction was part of a wider effort to integrate energy markets in the CEE region by increasing the security and flexibility of energy systems. These interconnectors proved crucial for the diversification of gas sources during the energy crisis and after Russia's supply disruption in 2022.

5. Legal and organizational basis of the energy sector in Ukraine

The Ukrainian energy sector operates under a robust legal framework, meticulously updated to align with international obligations and incorporate European Union directives. Central to this legal architecture is the Law of Ukraine "On the Electric Energy Market"[27], which embeds the Third Package of EU energy legislation, fostering a competitive electricity market by transitioning from a single-buyer wholesale market to a model emphasizing commercial trading segments. Renewable energy production is guided by the Law of Ukraine "On Alternative Energy Sources"[28], with recent amendments reflecting parts of the EU's Directive on energy efficiency within alternative sources. Additionally, the Law No. 3220-IX[29] on the "Green" Transformation of the Energy System underscores Ukraine's commitment to renewable energy, in line with Directive 2018/2001/EU.

The war has led to changes in energy consumption patterns, with a notable decrease in industrial consumption and an increase in consumption by the population. There has also been a shift in trade patterns, with reductions in both exports and imports of electricity and a reevaluation of trade partners.

The legislative framework extends to cogeneration and waste energy utilization[30], with recent updates focusing on highly efficient cogeneration as per EU directives. The "On Energy Efficiency" law[31] represents the cornerstone of energy efficiency legislation, considering EU standards on efficiency and eco-design, although some laws are yet to fully adopt EU regulations.

In 2023, significant strides were made with the enactment of Law 3141-IX[32], aimed at preventing misuse in wholesale energy markets, echoing the EU's REMIT Regulation on market integrity and transparency. This law, along with other resolutions, addresses various aspects of the energy sector, including renewable energy integration[33] and Ukraine's integration into the ENTSO-E system[34].

The gas sector is regulated by the "On the Natural Gas Market" law[35], incorporating EU directives and regulations into Ukrainian legislation, complemented by amendments to the Gas Transmission System (GTS) Code and related codes to enhance safety and crisis response. The oil sector, governed by the "On Oil and Gas" law[36], still faces challenges in defining critical infrastructure, a gap expected to be bridged with future legislation.

The recent "On Minimum Reserves of Oil and Petroleum Products" law[37], adopting EU Council Directive 2009/119/EC, mandates

27 https://zakon.rada.gov.ua/laws/show/2019-19#Text
28 https://zakon.rada.gov.ua/laws/show/555-15#Text
29 https://zakon.rada.gov.ua/laws/show/3220-20#Text
30 https://zakon.rada.gov.ua/laws/show/2509-15#Text
31 https://zakon.rada.gov.ua/laws/show/1818-20#Text
32 https://zakon.rada.gov.ua/laws/show/3141-20#Text
33 https://mev.gov.ua/storinka/postanovy
34 https://mev.gov.ua/taxonomy/terms/17%2C88
35 https://zakon.rada.gov.ua/laws/show/329-19#Text
36 https://zakon.rada.gov.ua/laws/show/2665-14#Text
37 https://zakon.rada.gov.ua/laws/show/3484-20#Text

Ukraine to maintain essential oil reserves, signifying a step towards energy security, set to be implemented in December 2024.

The main administrative bodies in energy sector are:

- The Cabinet of Ministers of Ukraine and the Ministry of Energy Ukraine, who are key subjects of management and policy making in the energy sector;
- The National Commission for State Regulation of Energy and Public Utilities as an independent regulator;
- The Antimonopoly Committee of Ukraine as a body that ensures the protection of economic competition in the energy market also.
- The Ministry of Energy and the State Property Fund are responsible for the implementation of state property rights in the energy sector[38].

Efforts of the key administrative bodies are underpinned by strategic documents like the Energy Strategy of Ukraine until 2050[39] and the National Economic Strategy until 2030[40], which outline long-term goals for coal reduction, renewable energy expansion, and infrastructure modernization, aligning with EU association agreements and global climate commitments.

38 http://www.ier.com.ua/files/Projects/2023/Report_Integration_2023_ua.pdf
39 https://zakon.rada.gov.ua/laws/show/373-2023-%D1%80#Text
40 https://zakon.rada.gov.ua/laws/show/796-2017-%D1%80#Text

6. Impact of European regulation and practice on the energy sector in Ukraine

Ukraine's journey towards integrating with the European Union's energy sector began prior to the Association Agreement, marking its commitment as a member of the Energy Community in 2011. This membership entails a pledge to adhere to the Third EU Energy Package and various network codes, emphasizing the priority of Energy Community Treaty provisions over the Association Agreement itself. The agreement, particularly through its updated Annex XXVII and expanded energy acquis in 2021, outlines Ukraine's obligations in both the electricity and gas sectors. These include opening market segments to competition, unbundling of system operators, ensuring consumer rights, and establishing fair tariffs and transparent regulatory practices.

Ukraine is actively progressing in its integration with the European energy sector, fulfilling key obligations under the Association Agreement and the Energy Community Treaty, including market liberalization, regulatory reforms, and infrastructural resilience.

Significant milestones include Ukraine's synchronization with the European Network of Transmission System Operators for Electricity (ENTSO-E) in 2022[41], facilitating the first electricity export to Europe[42], and adopting the Law on REMIT to enhance market integrity.

A lot of success was also achieved in the implementation of the joint capacity allocation. For example, Ukrenergo and Romanian electricity transmission system operator Transelectrica approved the rules for long-term and daily distribution. Daily auctions started on November 2, 2023, through the Ukrenergo distribution platform. The daily joint distribution rules on the interconnectors with Hungary, Slovakia and Poland were reviewed by the JAO (Joint Allocation Office a service company that facilitates the electricity market by organising auctions for cross border transmission capacity) and approved by the Ukraine`s national regulator[43].

Despite the war and constant shelling of the energy system, Ukraine continues to fulfill its obligations. All components of the electricity sales market: bilateral, day-ahead, intraday, balancing and auxiliary services are working. In July 2023, amendments were made to the legislation on green energy. The new amendments allowed renewable energy producers to sell electricity in the day-ahead, intraday, bilateral and balancing markets. Prosumers are eligible to install renewable energy equipment with 30 kW

Despite challenges, Ukraine has achieved significant milestones, such as synchronization with ENTSO-E, legislative advancements in energy efficiency and market integrity, and strengthening gas storage and transportation systems, underscoring its commitment to aligning with EU energy standards.

41 https://neighbourhood-enlargement.ec.europa.eu/document/download/bb61ea6d-dda6-4117-9347-a7191ecefc3f_en?filename=SWD_2023_699%20Ukraine%20report.pdf

42 https://www.mev.gov.ua/reforma/intehratsiya-u-yevropeysku-elektromerezhu-entso-e

43 https://mev.gov.ua/novyna/ukrayina-dosyahla-prohresu-v-enerhetychnykh-reformakh-mizhnarodni-partnery

of solar and wind capacity and up to 50 kW for a combined wind and solar system. Efforts in energy efficiency and the alignment with EU directives are notable, with legislative advancements and the establishment of the Energy Efficiency Fund to support war-damaged buildings. Furthermore, Ukraine has achieved complete separation of its Gas Transmission System Operator, aligning tariffs with EU regulations, and enhancing gas storage and transportation resilience, evidenced by the commercial storage capacity utilized by international companies.

A high level of compliance with EU regulations and the Directive on Energy Labelling and the Eco-Design Directive has been achieved. As of the beginning of 2023, 29 technical regulations on ecodesign and 16 on energy labelling were adopted.

In the realm of nuclear energy, legislative reforms[44] aim to transform Energoatom into a public joint-stock company, ensuring governance aligns with EU standards. These actions reflect Ukraine's steadfast commitment to fulfilling its obligations under challenging conditions, demonstrating progress in market operations, legislative alignment, and infrastructural resilience within the European energy landscape.

[44] https://zakon.rada.gov.ua/laws/show/2896-20#Text

7. Challenges in aligning Ukraine's energy sector with EU standards

Ukraine's energy sector faces significant challenges in fully aligning with European Union regulations and practices, especially in the context of ongoing war and the targeting of energy infrastructure by Russia. The European Commission's Enlargement Report highlights areas requiring urgent attention, notably in the pursuit of green transformation. Ukraine's commitment to adopting a National Energy and Climate Plan (NECP) in line with the 2030 Energy Community goals is crucial, yet progress has been limited with only 36% of renewable energy obligations met[45]. The ambition to increase the share of renewables in energy consumption faces hurdles, not least because of the destruction and occupation of key facilities in the south.

Renewable energy's integration into heating and cooling, particularly district heating, and the establishment of sustainability criteria for bioenergy remain incomplete. Additionally, challenges in ensuring the energy supply's security are evident. Partial incorporation of Directive 2005/89/EC into Ukrainian law has occurred, but regular reporting on electricity supply security and the resilience of power equipment against attacks are areas of concern.

Decarbonization of the energy sector is another area where Ukraine lags, having fulfilled just 22% of its obligations. The drafting of the NECP for 2025-2030[46] is underway, but a long-term strategy for achieving climate neutrality by 2050, aligned with EU goals, is notably absent.

Progress towards regulatory compliance in the transmission system is seen with Ukrenergo's ISO model certification, yet full ENTSO-E membership awaits the fulfillment of certification requirements, including supervisory board composition.

Legislation on projects of national interest in energy[47], crucial for implementing EU's TEN-E Regulation for trans-European energy network development, remains pending in parliament. War has also delayed key cross-border infrastructure projects, such as 750 kV OHL to Romania, Pivdennoukrainska–Isaccea, and 2x400 kV OHL to Slovakia, Mukacheve-V.Kapusany.

Energy efficiency in buildings requires legislative action on system verification, building certification versus energy audits, and criteria for public procurement. Additionally, Ukraine must adapt its legislation to include EU Directive 2009/73/EC principles on natural gas storage and transportation, addressing shortcomings in cost-sharing assessments and balancing codes.

Lastly, the management of radioactive waste, governed by a law from 1995[48], needs updating to meet EU directives on waste management and uranium legacy sites. This comprehensive overview underscores the multifaceted challenges Ukraine faces in harmonizing its energy sector with EU standards amid ongoing conflict and infrastructural damage.

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45 https://www.energy-community.org/dam/jcr:1731cc05-e414-47a8-95f8-4fb793fe0abd/EnC%20IR%202023%20Ukraine_kor2.pdf

46 https://www.me.gov.ua/Documents/Detail?lang=uk-UA&id=f7088035-142e-4912-9aa0-6fe2def80c1b&title=ProektNatsionalnogoPlanuZEnergetikiTaKlimatuUkraini2025-2030

47 https://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=75832

48 https://zakon.rada.gov.ua/laws/show/255/95-%D0%B2%D1%80#Text

8. Experience of Polish companies related to EU accession and membership useful for Ukraine and Ukrainian entrepreneurs

The experience of Polish energy companies related to EU accession and membership can be very helpful for Ukraine and Ukrainian entrepreneurs, especially in the context of modernising energy infrastructure, adapting to EU norms and standards and developing the RES market.

It is important to note that Polish experience is not explicitly positive, as Polish companies have delayed the necessary modernisation and decarbonisation measures for a long time. Yielding to pressure from various social and professional groups, i.e. miners' unions, has resulted in a lag in the modernisation of Polish energy companies and their adaptation to current market conditions in Europe. In terms of infrastructure modernisation, Poland had to upgrade its assets to meet EU requirements on energy efficiency, security of supply and environmental protection. Ukraine can learn from Poland's experience in bringing its electricity, gas and heat networks up to European standards, also in the context of using available EU funds.

Poland has also made significant improvements in the development of renewable energy by creating support programmes (auctions, CfDs) for large PV and wind farms, as well as programmes for citizens for installation of rooftop PV (My Current) or change of coal boilers for gas or heat pumps (Clean Air). The significant experience of the National Fund for Environmental Protection and Water Management (NFOŚ) can inspire the use of funds available from CO_2 emissions. Ukrainian companies can benefit from these experiences and processes and use the available funds and technologies to develop their renewable energy sector. Particular experience can be useful in the development of offshore wind energy.

Poland had to upgrade its assets to meet EU requirements on energy efficiency, security of supply and environmental protection. Ukraine can learn from Poland's experience in bringing its electricity, gas and heat networks up to European standards, also in the context of using available EU funds.

EU membership requires compliance with certain standards and regulations in the energy sector. Poland had to adapt its legislation to EU standards, which has provided greater stability and predictability for investors. Ukrainian companies need to learn how to operate in the single market, in the face of strong competition, high standards of consumer service and transparency of operation. They should align their operations with European standards to attract more investment and promote the development of the sector[49].

[49] More on EU accession process: https://greendealukraina.org/products/analytical-reports/the-energy-and-climate-roadmap-18-12-23

9. The prospects for cooperation between Polish and Ukrainian companies in the energy sector in the European market

Cooperation between Polish and Ukrainian companies in the energy sector can be mutually beneficial and contribute to economic growth, increased energy security in the region and closer Polish-Ukrainian relations.

Poland and Ukraine are synchronized since 2022 and thus can take full advantage of energy trade, increasing generation activity and positively influencing competition and prices. This may also be important in the context of emerging adequacy problems on both sides of the border. Both countries can support each other, especially in times of scarcity. The construction of further interconnectors remains to be considered, depending on the level of utilisation of current one and market demand for additional.

Cooperation in the gas sector could be an important field of interaction. Ukrainian gas storage facilities are among the largest in Europe (31 bcm) and, given not very large Polish storage facilities, could be used by Polish companies for seasonal gas storage. Poland can also assist Ukraine in the modernisation and expansion of its gas transmission and storage infrastructure. Polish companies are competent in construction, maintenance and management of infrastructure. This can contribute to the region's energy security and provide storage capacity for the winter season.

Ukraine has significant potential for the production of renewable gases, e.g. biomethane, as well as green hydrogen. The country is capable of producing significant quantities of these gases, which could cover the equivalent of the annual natural gas consumption of a medium-sized European country. Biomethane companies intend to export the first quantities to the EU as early as this year. However, they need to put in place EU-adapted guarantees of origin that demonstrate compliance with EU sustainability criteria. Ukraine's production potential could reach up to 20 bcm per year, which would be the highest volumes in Europe. Poland, which is also interested in increasing the share of biomethane in its own network, could be a natural consumer due to its geographical proximity and available interconnections. There is similar potential in the field of hydrogen production and trade. Ukraine has so far been involved in plans to build a hydrogen network, which unfortunately does not run through Poland, but through the Czech Republic and Slovakia to Germany. Plans to build the network in cooperation with Poland could create new conditions for the development of this branch in both countries. The construction of a new gas interconnector has also been delayed for many years. This is a project that would allow a better combination of the potentials of the two countries' transmission infrastructures and reduce barriers to cross-border gas trade, and in the future enable the development of markets for renewable gases - hydrogen and biomethane.

Poland and Ukraine can also cooperate in the development of renewable energy, exchanging experience, technologies and know-how. Poland, with its rapidly growing renewable energy sector, can be active in Ukraine in the construction of wind farms, solar plants and a provider of various maintenance services. An increasing number of companies in Poland

are also involved in demand management services and energy storage.

Cooperation in improving energy efficiency can save money and reduce greenhouse gas emissions. Ukraine has a great potential in this field, especially in the area of thermal modernisation of buildings and reducing their energy intensity. Poland is much more advanced in this process and has a number of companies specialising in such services. Polish and Ukrainian companies can cooperate in implementing projects to improve energy efficiency in the industrial, municipal and residential sectors. Potential also exists in the district heating sector, as both countries have well-developed district heating systems in cities, which are in urgent need of modernisation.

Cooperation between industry in Poland and Ukraine, especially in the energy and new technology sectors, can facilitate knowledge sharing and joint projects that support Ukraine's energy transition efforts. Moreover, the establishment of production facilities in Poland for Ukrainian reconstruction can strengthen bilateral economic ties and be mutually beneficial for both countries.

Joint research and innovation initiatives can contribute to the development of new technologies and increase the competitiveness of both countries on the international market. Poland and Ukraine can cooperate on research of new technologies for generation, energy storage or grid management.

Poland has actively supported technological innovation in the energy sector, which has contributed to improved efficiency and sustainable development. Ukrainian companies can cooperate with Polish partners in technology transfer. EU research funds and programmes (eg. Horizon) support the development of new technologies in the energy sector and cross-border cooperation between scientific institutions and practitioners.

Poland has been developing its nuclear power plant programme for many years, which is now entering an advanced design phase. Ukraine, on the other hand, has been operating nuclear power plants since the 1960s and has a well-developed industry and research sector in this area. Cooperation between Polish and Ukrainian companies in this sector could be mutually beneficial and contribute to the progress of the Polish nuclear programme. The area of nuclear fuel production and processing, as well as waste management, is also promising.

In addition, cooperation between industry in Poland and Ukraine, especially in the energy and new technology sectors, can facilitate knowledge sharing and joint projects that support Ukraine's energy transition efforts. Moreover, the establishment of production facilities in Poland for Ukrainian reconstruction can strengthen bilateral economic ties and be mutually beneficial for both countries. Overall, leveraging the experience of Polish energy companies within the EU can help Ukraine develop its energy sector, promote sustainable practices and support economic growth through cooperation with Polish partners.

10. Strengthening energy ties between Poland and Ukraine in the European market

The energy sectors of Ukraine and Poland present a landscape ripe for cooperation within the European market, despite challenges posed by ongoing war and a historical reliance on coal. Both nations have embarked on paths toward diversifying their energy portfolios, with Poland advancing in renewable energies like wind power (on land) and Ukraine leveraging its nuclear capabilities, offering a greener alternative to traditional thermal power. This mutual journey toward sustainability opens avenues for collaboration, such as sharing expertise in nuclear energy development, integrating gas transportation networks for enhanced EU gas supply, and utilizing Ukraine's substantial gas storage capabilities.

Ukraine is in a slightly better situation than Poland, since it has nuclear power plants. The nuclear energy is considered greener than thermal energy. Poland is currently just starting to build nuclear power plants. Meanwhile, Ukraine only needs to modernize its nuclear power units. Accordingly, Ukraine can advise Poland on the development of nuclear energy.

Countries can also collaborate in the natural gas sector. Ukraine can supply surplus gas through its developed gas transportation system to Poland. The European gas corridor "North-South" passes through the territory of Poland. By connecting the two networks, Ukraine could supply natural gas to the territory of the European Union.

In addition, Ukraine has significant natural gas storage capacity. Poland could use them for storage. And in the future, these warehouses could be used to store bioenergy.

> ***Joint ventures in renewable energy technologies, infrastructure modernization, and legislative harmonization offer pathways to enhance bilateral relations and contribute to the European energy transition.***

Moreover, the potential for joint ventures in emerging energy technologies, including biomethane production and wind energy expansion, highlights a forward-looking

strategy that can benefit both countries and the broader European community. Poland's initiatives to incentivize renewable energy adoption and reduce the level of CO_2 emissions among consumers through solar panel compensations could serve as a model for Ukraine, which is also looking to rebuild and modernize its energy infrastructure amidst significant wartime damages. Since a significant part of energy networks in Ukraine was damaged or destroyed, Ukraine could use Poland's experience in building low and medium-voltage lines.

Ukraine has already accumulated a lot of experience in the development of biomethane, which can be useful for Poland. In addition, Ukraine has a well-developed wind energy industry and more loyal legislation in this area. Accordingly, it is possible to build windmill farms on the border with Poland, which would transmit energy to the neighbouring country.

Furthermore, with Poland's experience in aligning its energy legislation with EU standards, a collaborative effort in legislative harmonization could facilitate Ukraine's integration into the European energy framework, especially in areas of energy efficiency, green hydrogen, and energy storage innovations. By leveraging European funds for joint pilot projects, the two countries could pioneer solutions in hydrogen energy and other sustainable technologies, thereby reinforcing their roles as key players in the European energy transition. This partnership, grounded in shared goals and complementary strengths, underscores the potential for Poland and Ukraine to lead by example in the energy sector's evolution towards greater efficiency, sustainability, and resilience. After Poland's accession to the European Union, many changes were made to the EU legislation in the field of energy. Poland already has experience in implementing EU legislation. Accordingly, countries can cooperate in this direction. Poland can transfer the experience of approximation of legislation both at the national and regional level. Ukraine should also remember that currently EU legislation is limited not only to energy, but to energy and climate issues.

11. Recommendations for Ukraine and Ukrainian energy companies related to accession to the EU

Infrastructure modernisation

After the end of the war, Ukraine will face the major challenge of having to rebuild and modernise its energy infrastructure. Ageing power and CHP plants, decentralizing energy generation, upgrading transmission and distribution infrastructure, as well as thermo-modernisation of buildings and reducing energy intensity will become an urgent need. Ensuring an adequate level of generation capacity and 'bridging' the gap caused by the decommissioning of old generation sources requires a lot of resources. This modernization should go hand in hand with the accelerated development of RES and its market integration, the construction of new nuclear units and energy storage facilities.

Ukraine can adopt and adapt Poland's experiences in building and modernizing low and medium-voltage lines and incentivizing renewable energy adoption among consumers.

Continuation of reforms

A key element of Ukraine's integration into the EU will be the further development of a competitive energy market, which will contribute to making electricity and gas prices closer to cost reflective levels. This will enable the sector to open up to new investments, its liberalisation and increase competition. The Ukrainian energy sector needs to change in order to increase transparency and competitiveness. This will require the full implementation of EU legislation (including network codes and guidelines), improvement of the balancing market and having independent control and supervisory institutions, i.e. the energy market regulator and the competition protection authority, the abolition of price caps or artificially low prices for certain segments of society or institutions.

Ukraine needs to take comprehensive efforts to align its energy legislation with the EU law. In doing so, Ukraine can leverage Poland's experience of the EU accession. In particular, this includes updating laws related to energy efficiency, renewable energy, natural gas storage, and radioactive waste management. Ukraine should adopt the Law "On Projects of National Interest in the Field of Energy", implement the TEN-E Regulation (EU) 347/2013 and supplement the Law "On the Management of Radioactive Waste" with provisions of Council Directive 2014/87/Euratom and Council Directive 2013/59/Euratom.

Environmental and climate policies

Ukraine should make progress in implementing environmental and climate protection legislation and policies. A border carbon adjustment mechanism (CBAM) is about to come into force in the EU, which may affect Ukrainian producers in energy-intensive sectors. CBAM aims to ensure that products imported into the EU meet the same environmental standards as those produced in the EU. To avoid this, Ukraine should implement a carbon pricing, which would be linked to the EU ETS.

To comply with the EU regulations and make the transition smoother, Ukraine should implement adopted June 2024, a comprehensive National Energy and Climate Plan (NECP) outlining how will meet the energy and climate goals for 2030. The plan

should focus on increasing the share of renewable energy sources in the energy mix. This includes actively developing wind, solar, and biomethane energy projects to reduce reliance on coal and other "black" energy sources.

In addition, Ukraine can initiate projects with Poland and other EU countries in renewable energy to foster bilateral and European collaborations and simultaneously work toward sustainable energy transition.

Creation of Long-term strategy

The transformation of the energy sector must take place according to well-planned and modelled scenarios. Ukraine needs strategic long-term documents that will set the path for the sector's transformation in the next decades and then be implemented consistently. The process of developing these documents should be transparent to give market participants the opportunity to adjust their business strategies and experts the opportunity to evaluate. Detailed strategies should also be developed for specific sectors (electricity, heating, gas).

In planning its long-term strategy Ukraine should consider issues such as strengthening the integration of Ukraine's gas transportation network with European corridors, particularly through collaboration with Poland; modernizing Ukraine's nuclear energy capacity by investing in modernization and sharing expertise with countries like Poland, and finally focusing on energy efficiency and consumer engagement.

Thorough preparation for accession negotiations

The coming years will be a time of preparation, both on the EU and Ukrainian side, for the enlargement process. This is a demanding, long and complicated process requiring the preparation of a huge amount of legislation in terms of its compatibility with the Acquis Communautaire. This includes harmonisation of legislation on electricity generation and transmission networks, natural gas markets, implementation of renewable energy sources and environmental protection and climate policy. This will require a well prepared and competent public administration resources and expert base, which will have to undertake a huge amount of alignment and implementation work. It is also important to develop a strategic approach to the accession negotiations and to identify key areas for Ukraine.

The Warsaw Enterprise Institute (WEI) is a leading Polish think tank originating from the Union of Entrepreneurs and Employers. Established to enhance Poland's prosperity, WEI focuses on four critical areas: State and Law, Security, Economy, and Demographics. WEI provides solutions for state institutions and independent social or commercial entities through rigorous research, analysis, educational projects, and publication of commentaries, stances, memoranda, and reports.

WEI believes that Poland's security and the prosperity of its citizens depend on their rights and freedoms, including the right to choose their way of life, equality before the law, and the right to accumulate wealth. WEI advocates for a strong and efficient state to protect against injustice and external threats but emphasizes that the state's role should be minimal to foster entrepreneurial energy and spirit.

WEI's key areas of focus are:

State and Law. WEI is dedicated to improving the quality of laws, the legislative process, and their application and enforcement in court proceedings. WEI supports a legal framework based on simplicity and the natural order, advocating for minimal regulation and emphasizing voluntary agreements and contracts. The organization promotes a strong but limited state focused on ensuring security and justice for its citizens.

Security. Learning from historical experiences, WEI supports Poland's participation in defense pacts and international organizations while emphasizing self-reliance, with the Polish Army as the key guarantor of national independence. WEI advocates for a professional army capable of effectively countering potential threats and stresses the importance of energy security by diversifying energy sources and supply routes. The institute supports Poland's presence in the EU as an economic community but opposes the concept of a single European state dominated by bureaucracy. Poland's foreign policy, according to WEI, should prioritize national political and economic interests.

Economy. WEI asserts that a robust economy is essential for funding national defense, improving living standards, and halting depopulation. The institute calls for straightforward business regulations, low and simple taxes, and an efficient judiciary. WEI opposes harmful taxes and bureaucratic barriers, advocating for equal conditions for business competition and focusing on small and medium-sized enterprises (SMEs), the backbone of the Polish economy. Educational reform to align with job market needs and limited state participation in the economy, except in military and energy sectors, are also crucial economic policies WEI promotes.

Demography. Addressing unfavorable demographic trends is crucial for achieving WEI's goals. The institute supports policies to increase birth rates, curb emigration, and implement sensible immigration policies. Strengthening families' legal and social position to encourage higher fertility rates is a priority. WEI believes in allowing citizens to retain more earnings to support child-rearing and advocates for localized social support policies targeting only those in need.

WEI maintains a nonpartisan stance, supporting beneficial national solutions regardless of political origin. WEI collaborates with Polish authorities through professional analysis and active public engagement in strategic planning, policy development, and implementation, contributing to Poland's development and prosperity.

INSTITUTE
FOR ECONOMIC RESEARCH
AND POLICY CONSULTING

The Institute for Economic Research and Policy Consulting (IER) is the leading Ukrainian independent think tank focusing on economic research and policy advice. It has more than 20 years of experience in economic policy analysis and the development of policy recommendations. Since 2016, the IER actively supports regional civil society organizations in Ukraine through re-granting, mentoring, training, and awareness-raising campaigns.

IER's mission is to provide alternative solutions to key problems of social and economic development in Ukraine based on the rule of law, democracy, and market economy principles. The IER's special focus is on promoting the EU-Ukraine Association Agreement.

The IER aims to:

1. provide top-quality expertise in the field of economy and economic policy-making and developing strategic and instrumental components of the economic policy;
2. formulate a public opinion through the organization of public debate, facilitation of public dialogue and spreading knowledge;
3. contribute to the development of economic and social sciences and promote the development of the Ukrainian research community.

Since its establishment in 1999, the IER has focused on economic research and policy advice in macroeconomic policies, business climate, small and medium entrepreneurship (SME) development, international trade, financial markets, and regional and sectoral development. Since the early 2010s, the IER has been extensively focused on promoting the European integration of Ukraine.

The IER's particular strength is monitoring business attitudes and expectations towards various aspects of the business environment and regulation, including policy impacts, by conducting regular and ad-hoc business tendency surveys. Since July 2002, the IER has held a regular quarterly survey of 450 industrial enterprises in Ukraine to monitor, forecast, and analyze business activity based on the information received "from the ground up" judgments and economic agents' anticipations. Since May 2022, the survey has been conducted monthly and covered 500+ from all controlled by GOU oblasts. The IER has developed an Annual Business Climate Assessment – a policy tool for monitoring and assessing business climate and SME development based on firms' perceptions and attitudes. Annually the IER has conducted 1000+ enterprises regarding trade facilitation issues and customs work assessment.

After 24 February 2022 year, the IER focused on supporting Ukrainian resistance to full-scale military aggression. Our activities are repurposed according to stakeholder needs. Since May 2022, the IER has run the Program "Analytics and Information of the Countries' Economy during the War Time." The IER produces and promotes monthly the analysis and forecast of the Ukrauaianin economy, including monthly surveys of 500+ enterprises. The IER is a member of the public initiatives RISE (a coalition of Ukrainian and international organizations working for Ukraine's Reconstruction Integrity, Sustainability, and Efficiency). Also the IER is the founder of the RRR4Ukiraine think tank initiative, which aims to promote honest and visionary recovery based on the principles of openness and accountability.

The IER successfully combines professional analysis with active involvement in public dialogue and advocacy and actively cooperates with Ukrainian national and regional authorities in strategic planning and policy development, and policy implementation. The IER has the capacity for grant management and provides re-granting for capacity development to regional civil society organizations and media.

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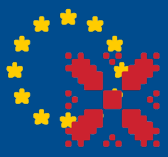

UKRAINIAN PATH TO
EUROPEAN UNION.
THE POLISH EXPERIENCE