

# Assessing the Rules of Functioning and Organization of the Wholesale Natural Gas Market in the European Union and Ukraine: Legal and Socio-political Perspective.

## Part 1. The Backdrop: Natural Gas Market in the EU and Ukraine\*

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*This author considers current European Union and Ukraine's wholesale natural gas market in light of regulatory measures that had been enacted and/or implemented with respect to its organization and functioning. The analysis points to three major goals EU's energy sector regulation is geared to achieve: 1) economic (i.e. procompetitive support); 2) energy security; and 3) social goals. As such, the EU wholesale energy market can be regarded as a regulatory instrument. Ukraine assumed the obligation to implement EU legislation in the field of energy sector regulation (Energy Community *acquis communautaire*): Act of Ukraine No. 329-VIII of 9 April 2015 on natural gas market implements fundamental principles of the third energy package in the area of organization and functioning of the wholesale natural gas market. However, for Ukraine's wholesale energy market to assume characteristics of a regulatory instrument akin to the EU market, further implementation of EU regulation 1227/2011 (REMIT) and, to some extent, implementation of the fourth energy package is needed.*

*In the Part 1 author focuses on providing a background on gas market conditions in the EU and Ukraine, which will provide an important backdrop for the second part of this study where he will discuss in specific regulatory issues associated with adoption of EU gas market principles in the Ukrainian gas market.*

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## 1. Introduction to Part 1

At about one quarter of total supply, natural gas is a significant part of EU's primary energy consumption. Also, while consumption of other fossil fuels such as coal or oil is projected to decrease in the

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decades to come, both share and absolute volume of natural gas consumption are estimated to stay at current levels (Table 1). This is predicated upon: 1) gas-fired power generation ability to provide base capacity to balance the intermittent nature of renewables, which have increasingly been a fuel of choice in many European countries; and 2) large volumes of natural gas used directly in industry and for heating purposes which are not readily replaceable by renewable energy.

**Table 1. Primary Energy Consumption in the EU by fuel, 1995-2040\***

	Total	Oil (Mb/d)	Gas (Bcm)	Coal	Nuclear	Hydro	Renewables**
Total 2017	1689	13	467	234	188	68	166
Total 2040	1475	8	457	79	102	72	429
Share 2017		37%	24%	14%	11%	4%	10%
Share 2040		27%	27%	5%	7%	5%	29%
Abs. Change 1995-2017	12	-1	78	-129	-12	-7	160
Abs. Change 2017-2040	-215	-5	-10	-155	-86	4	263
Change (%) 1995-2017	1%	-10%	20%	-36%	-6%	-10%	>100%
Change (%) 2017-2040	-13%	-37%	-2%	-66%	-46%	6%	158%
Annual Change 1995-2017	0%	-0.50%	0.80%	-2.00%	-0.30%	-0.50%	>10%
Abs. Change 2017-2040	-0.60%	-2.00%	-0.10%	-4.60%	-2.60%	0.20%	4.20%

\* units in Millions of tonnes of oil equivalent (Mtoe) unless otherwise noted

\*\* including biofuels

Source: BP 2019 Outlook.<sup>1</sup>

However, lack of changes in consumption volumes is not parallel with stagnation in EU's wholesale natural gas market, that is looking at significant modifications geared toward increasing diversification and competition and, in doing so, supporting the EU energy security goals. Lower EU production (predicted 56 billion cubic feet vs. 118 bcm in 2017)<sup>2</sup> related in part to phasing out of EU's largest but aging and increasingly less productive Groningen field, necessitates higher level of imports<sup>3</sup>. At the same levels of

- 1 Data from the BP Energy Outlook (2019). Available at: <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2019-region-insight-eu.pdf>. [accessed: 20.11.2019].
- 2 Data from the BP Energy Outlook -2019. Available at: <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2019-region-insight-eu.pdf>. [accessed: 20.11.2019].
- 3 The precipitous fall in consumption related to unexpectedly low and falling production at the Groningen field is discussed by Frédéric Simon, „Europe grapples with Dutch gas production »collapse«”, *EU-ROACTIVE news* (16 May 2019). <https://www.euractiv.com/section/energy/news/europe-grapples-with-dutch-gas-production-collapse/>. [accessed: 3.06.2020].

consumption, this will inevitably lead to higher dependence on gas supplies from non-EU actors<sup>4</sup>.

The issue is particularly pressing as the EU increasingly focuses on ensuring greater energy security in the region. Much of the regulation in the natural gas sector has been motivated by this goal, including efforts to liberalize and diversify market supply and supply routes. The hope is to ensure competition and prevent any one supplier from using its dominance to extract economic rents or geopolitical benefits. Thus, much of the attention is given to the role of Russia, Europe's dominant supplier to date. Also, heavily discussed is the fate of Ukraine as a major transit territory for Russian gas as it stands to lose this status to new Russian pipelines bringing gas directly to the EU (Nord Stream 1 [NS1] and Nord Stream 2 [NS2]).

This paper provides an assessment of regulations in both the EU and Ukraine that are designed to ensure a well-functioning wholesale natural gas market. As such, it starts with a look at the natural gas market in the EU in general and the CEE region in specific. Then it moves to defining the concept of sector regulation and points to its general goals as well as legal instruments that serve the fulfilment of those goals. Thirdly, the article considers the details of the EU gas market regulations from the perspective of energy security. In particular, it covers energy packages one through four and other EU regulations devised to protect and promote market access, competitiveness and transparency. Fourthly, the paper takes a detailed look at the Ukrainian natural gas sector and analyses the reforms that the sector has undergone in recent years, including their adherence to the EU framework, as required by the 2014 Treaty establishing Energy Community between the EU and Ukraine. The paper concludes with authors' evaluation of the extent to which legal framework necessary to protect Europe's natural gas sector can be considered as successfully established in the EU and Ukraine.

## **2. Changes in the Natural Gas Market: Beyond Europe and Russia**

Natural gas market is currently undergoing momentous changes. These changes could help Europe avoiding issues related to energy dependency and its potential economic and geopolitical consequences. Traditionally

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4 Estimates available in BP Energy Outlook (2019): <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2019-region-insight-eu.pdf>. [accessed: 20.11.2019]. According to Eurostat, in 2018 Europe hit a record when it comes to natural gas dependency at 77.9% despite year on year decrease in consumption as EU's gas production fell by 8.1%. Data available at: [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Natural\\_gas\\_supply\\_statistics&oldid=447636](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Natural_gas_supply_statistics&oldid=447636). [accessed: 11.20.2019].

regional in nature, rigid and often characterized by the existence of regional monopolists, natural gas market is becoming increasingly liberalized, fluid, and, as a result, more global in nature. New liquefaction technology allowed commercialization of vast natural gas resources, including those in Qatar and made available to consumers all over the world the newly discovered, unconventional gas resources in the US and Australia. Within a decade group of LNG exporters grew to include also countries like Russia, Algeria, Nigeria, Malesia, Oman, or Papua New Guinea.

Ample supply and push for less carbon intensive fuels have encouraged fuel switching and pushed an increasing number of countries to integrate natural gas within their economies<sup>5</sup>. In 2018, 20 countries exported LNG to 42 different country destinations<sup>6</sup>. In addition to higher number of participants, the nature of transactions transformed the market from dominated by long-term, oil-indexed contracts with rigid destination clauses to one where significant volumes are sold under medium- and short-term contract. Also, spot market has grown significantly, many contracts index gas to hub prices rather than to oil, and destination clauses have often been replaced by FOB (free-on-board) designations that allow buyers to freely dispose of the purchased gas as soon as the latter leaves the supplying facility. This introduces additional flexibility where – depending on market conditions – buyers can consider resale and redirecting shipments to a variety of delivery location.

The changes in the natural gas market have been clearly conducive to the EU's regulatory efforts focused on increasing diversification of supplies and supporting energy security such as the subsequent Energy Packages as detailed later in this study. These packages also offer funding for diversification projects within the so-called Project of common interests (PCI) initiative<sup>7</sup>.


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- 5 International Energy Agency IEA (2019) report considers in detail the shifts from coal to natural gas occurring around the world as part of its focus on the role of natural gas in energy transitions. The report is available here: <https://webstore.iea.org/download/direct/2819?fileName=TheRoleofGas.pdf>. [accessed: 11.20.2019].
  - 6 More details can be found in the report by the International Group of Liquefied Natural Gas Importers (2019) available at: [https://giignl.org/sites/default/files/PUBLIC\\_AREA/Publications/giignl\\_annual\\_report\\_2019-compressed.pdf](https://giignl.org/sites/default/files/PUBLIC_AREA/Publications/giignl_annual_report_2019-compressed.pdf). [accessed: 11.10.2019].
  - 7 Per European Commission „Projects of common interest (PCIs) are key cross border infrastructure projects that link the energy systems of EU countries” and „are intended to help the EU achieve its energy policy and climate objectives: affordable, secure, sustainable energy for all citizens, and the long-term decarbonization of the economy in accordance with the Paris Agreement” as synthesized here: <https://ec.europa>.

**Table 2. Known or Probably Politically Driven Energy Supply or Price Manipulations by Russia**

	1990	1992	1993	1994	1998	1999	2001	2002	2003	2005	2006	2007	2008	2009	2010	2014	2015
Belarus												X					
Georgia							X		X	X	X						
Estonia		X	X														
Lithuania	X	X	X		X	X					X						
Latvia		X	X					X									
Moldova											X						
Poland																	
Slovakia																X	
Turkmenistan														X			
Ukraine		X		X							X		X	X		X	X

X – instances involving crude

X – instances involving natural gas

 shaded columns indicate years when interruptions in delivery caused systemic effects on oil and gas supplies in Europe

Source: Collins (2018)<sup>8</sup>.

Diversification of supply has become paramount particularly in the CEE region, where many countries have been highly (if not completely) dependent on Russia for natural gas supply (see Map 1). Also, many have experienced first-hand disadvantageous pricing as well as Russia’s willingness to leverage its dominant supplier position to exert geopolitical influence See Table 2 for a tally of such events 1990<sup>9</sup>.

eu/energy/en/topics/infrastructure/projects-common-interest. [accessed 11.20.2019]. Specific legal criteria for a project to be considered a PCI are spelled out in the Regulation (EU) No 347/2013 of the European Parliament and of the Council. List of most recent projects was adopted by the European Commission on October 31, 2019 as Annex amending Regulation (EU) No 347/2013 and is available here: [https://ec.europa.eu/energy/sites/ener/files/c\\_2019\\_7772\\_1\\_annex.pdf](https://ec.europa.eu/energy/sites/ener/files/c_2019_7772_1_annex.pdf). [accessed: 11.20.2019].

8 Gabriel Collins, „Russia’s Use of the »Energy Weapon« in Europe” *The James Baker Institute for Public Policy* (2018): 3. [https://www.bakerinstitute.org/media/files/files/ac785a2b/BI-Brief-071817-CES\\_Russia1.pdf](https://www.bakerinstitute.org/media/files/files/ac785a2b/BI-Brief-071817-CES_Russia1.pdf). [accessed: 3.06.2020].

9 Collins, „Russia’s Use of the ‘Energy Weapon’ in Europe”, 3.

## Map 1. Europe's Dependency on Russian Gas

Dependency on Russian Gas by Country, 2018 IEA data



Data Source: IEA, Authors' rendition

Lack of diversification of supply in the CEE relates to the region's Soviet legacy and is difficult to overcome even in the age of globalizing natural gas market. Several factors play a role here: 1) existing long-term contracts with the Russian gas export giant, Gazprom; 2) existing pipeline infrastructure between Europe and Russia (Soviet era's: Yamal and Druzhba and Nord Stream 1 that began operation in 2012); 3) lack of adequate infrastructure integration within the region as well as with other EU countries (Map 2 that shows well this contrast in pipeline density); and 4) despite some progress, continuingly insufficient infrastructure (pipeline and LNG) connecting CEE with other natural gas producers such as Norway, Azerbaijan, the US, Qatar etc. ; 5) low cost of extraction of Russian gas that can undercut and eliminate competition to expand Russia's dominance and potential influence later on.

## Map 2. Natural gas pipelines in Europe, 2014

Global Natural Gas Pipelines (2014 data)



Map Source: ArcGIS<sup>10</sup>. Authors' rendition

Concerns related to the functioning of the natural gas market and security of supply in the CEE have been growing particularly strong as Russia pushed for expansion of its pipeline network destined for Europe. This includes the controversial Nord Stream 2 project that would double capacity of its predecessor (NS1) allowing Russian gas to circumvent Ukrainian transit.

Historically, Ukraine has been a transit territory for majority (approximately 2/3) of Russian gas destined to Europe. However, due to series of disagreements with Russia over natural gas pricing and payments of Ukraine's outstanding debts, the transit has become increasingly unreliable, marred by several breaks in gas supplies to Europe, some of them at times of exceptionally high demand. Russia has used these instances to argue for an alternative pipeline route – NS1 and NS2 – that could replace Ukrainian transit and provide more reliable supply<sup>11</sup>. NS1 has been functioning since 2012, often

10 Global Natural Gas Pipelines. Available at: <https://www.arcgis.com/home/item.html?id=523877884f1540319d1d1b961c6abb49>. [accessed: 11.09.2019].

11 Hanna Smith, „Russian foreign policy and energy: the case of Nord Stream gas pipeline”, [in:] *Russia's Energy Policies. National, Interregional and Global Levels*, ed. Pami Aalto (Cheltenham, UK, Northampton,

at its capacity of 55 bcm per year. NS2 is currently being built and projected to double this capacity in mid-2020. The pipeline has been vehemently protested not only by Ukraine but also by many CEE countries which see it as a way for Russia to try to undercut and eliminate competition; keep the CEE region highly dependent, potentially increase dependency of other EU countries on Russian gas, and in doing so preserve if not increase Russia's ability to use its market power to both extract rents and gain political influence<sup>12</sup>.

In addition to the transit issues, the disputes over pricing/debt have left Ukraine without access to (cheap) Russian gas and reliant on reverse flows of natural gas from Europe (Hungary, Slovakia, and Poland) that are priced at higher (i.e. market) values<sup>13</sup>. Russian occupation of areas where most of Ukraine's natural gas resources are situated as well as annexation of Crimea where potential resources could be located additionally exacerbate the issues.

In this context, harmonization of Ukrainian laws to reflect EU's energy directives that promote competition and transparency becomes an important element of ensuring progress in a quest to support Ukraine's energy security. In particular, the ability of Ukraine to incorporate and follow EU laws can play an important role in ensuring security of natural gas supply for both entities and counterbalance Russia's strong position in the European gas market.

### 3. Goals of Energy Sector Regulation

This paper applies a functional approach to defining „sectoral regulation,” to include both regulatory acts and method of their implementation. Sectoral regulation is a special state interference in the economy directed at network infrastructure sector that includes enterprises, recipients and

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MA, USA: Edward Elgar, 2012), 117; Margarita Mercedes Balmaceda, „Russia's central and eastern European energy transit corridor: Ukraine and Belarus”, [in:] *Russia's Energy Policies. National, Interregional and Global Levels*, ed. Pami Aalto (Cheltenham, UK, Northampton, MA, USA: Edward Elgar, 2012), 136. Also see: Michał Kaciewicz, „Nord Stream II. Wielka gra Kremla o bałtycką rurę. Co grozi Polsce?” *Nesweek*, (2017). <https://www.newsweek.pl/swiat/polityka/nord-stream-ii-o-co-chodzi-w-sporze-o-rosyjski-gazociag/6p5zv38>. [accessed: 3.06.2020].

- 12 For more details on this issue please see: Anna Mikulska, „Nord Stream 2: between monopoly and diversification” *Sprawy Międzynarodowe*, No. 4 (2018): 46 et seq.
- 13 According to the 2018 annual report by Naftogaz, Ukraine imported natural gas via reverse flows from Slovakia (61%), Hungary (31%), and Poland (7%). Report available at <http://www.naftogaz.com/files/Zvity/Annual-Report-2018-engl.pdf>. [accessed: 16.11.2019].



consumers of goods and services, and all other market participants<sup>14</sup>. The features that distinguish sector regulation from any other form of state intervention in the economy include: specific entities towards which the regulation is directed (market participants), specific type of enterprises involved (former state monopolies); specific nature of infrastructure held (managed by) those enterprises; regulatory mission relating to what is considered public interest; and existence of a regulatory body, i.e. market regulator that is specialized<sup>15</sup>, autonomous<sup>16</sup>, and has exclusive discretionary powers<sup>17</sup>. Regulations are

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- 14 Also see: Eryk Kosiński, „Regulacja sektorowa – stałość czy zmienność pojęcia?”, [in:] *Prawne instrumenty oddziaływania na gospodarkę*, ed. Andrzej Powalowski (Warszawa: Wydawnictwo C.H. Beck, 2016), 119-120; and Eryk Kosiński, *Regulacja sektora energetycznego w Unii Europejskiej oraz na Ukrainie. Cele i prawne środki regulacji sektora energetycznego* (Poznań: Wydawnictwo Naukowe UAM, 2019), 339-348.
- 15 That being said, some countries – i.e. Spain, Germany, Hungary, and to an extent Ukraine- employ multi-sectoral regulatory agencies.
- 16 For many scholars, the independence of the regulatory body is a basic criterion distinguishing sectoral regulation. Andrzej Szablewski also points out that formal autonomy is not enough for the criterion to be fulfilled. Andrzej Szablewski, *Zarys teorii i praktyki reform regulacyjnych na przykładzie energetyki* (Łódź-Warszawa: Instytut Nauk Ekonomicznych PAN, 2000), 15. At the same time, Jan Walulik indicates that the position of the regulatory body is secondary to regulation understood as a function of the state in relation to the economy. Jan Walulik, *Reforma regulacyjna. Przykład transportu lotniczego* (Warszawa: Instytut Wydawniczy EuroPrawo, 2013), 151.
- 17 See apt remarks in this respect in Waldemar Hoff, *Prawny model regulacji sektorowej* (Warszawa: Wydawnictwo Difin, 2008), 88 et seq. and 102 et seq. Regulatory discretion is often criticized as undemocratic as regulatory bodies are usually not elected in democratic elections but appointed. At the same time, law gives them wide ranging power, which is subject to court review. See Stephen Breyer, „Analyzing Regulatory Failure: Mismatches, Less Restrictive Alternatives, and Reform” *Harvard Law Review*, No. 3 (1979): 3. A competing view represented posits that broad discretion guarantees independence from political influence. That said it is emphasized that the rules for exercising discretion should be subject to strict legal regulation. See Anthony I. Ogus, *Regulation: Legal Form and Economic Theory* (Oxford – Portland Oregon: Hart Publishing, 2004): 341.

usually introduced *ex ante* but *ex post* and *hybrid* actions are also possible<sup>18</sup>. Sectoral regulations are generally characterized by their focus on economic performance<sup>19</sup> and use of sector-specific regulatory measures (instruments).

In this context the goal of energy sector regulation is to: 1) support **economic principles** related to demand and supply, effectiveness, efficiency, and market competition; 2) ensure **consumer protection**, including individual consumers, particularly those most economically vulnerable; and relatedly and **social welfare**; 3) provide **energy security** understood as security of supply in natural gas and electricity, including security of transmission and distribution systems; and 4) safeguard **environmental and climate protection**.

#### 4. Concluding Remarks to Part 1

Both, the EU and Ukrainian natural gas markets have been and will be undergoing significant transformation, which is necessitated by changes in the gas supply options as well as general push for cleaner fuels. Over the years Ukraine has expressed its willingness and commitment to increase its collaboration, if not integration, with the European Union. To this end, it shall be crucial to establish the relevant EU and Ukrainian regulation as far as the legal framework for the functioning of the wholesale natural market. It shall be particularly important to determine to what extent those regulations realize all regulatory objectives, i.e. economic goals (efficiency, efficiency, functioning efficiency, balancing supply and demand, supporting market competition), energy security objectives, and social goals (protection of consumer welfare).

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18 See extensive considerations on this topic Marek Szydło, *Prawo konkurencji a regulacja sektorowa* (Warszawa: Wolters Kluwer, 2010): 34 et seq.; Katarzyna Właźlak, „Inflacja prawa administracyjnego w zakresie planowania”, [in:] *Kryzys prawa administracyjnego*?, ed. Dariusz Ryszard Kijowski and Patrycja Joanna Suwaj, 2. vol. ed. Patrycja Joanna Suwaj *Inflacja prawa administracyjnego* (Warszawa: Lex a Wolters Kluwer business, 2012): 125-126; and Michał Będkowski-Kozioł, „Plan jako instrument regulacji sektorów infrastrukturalnych?”, [in:] *Instrumenty i formy prawne działania administracji gospodarczej*, ed. Bożena Popowska and Katarzyna Kokocińska (Poznań: Wydawnictwo Naukowe Uniwersytetu Poznańskiego, 2009), 181 et seq.

19 Teresa Rabska, „Działania administracji publicznej w świetle współczesnej koncepcji publicznego prawa gospodarczego”, [in:] *Instrumenty i formy prawne działania administracji gospodarczej*, ed. Bożena Popowska and Katarzyna Kokocińska (Poznań: Wydawnictwo Naukowe Uniwersytetu Poznańskiego, 2009), 19.

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