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An Overview of the European Union Legislation Regarding the Natural Gas Market

Stelian GRASU*
Bucharest University of Economic Studies, Bucharest, Romania
**Corresponding author, grasustelian@gmail.com*

Ruxandra Mădălina POPP
Bucharest University of Economic Studies, Bucharest, Romania
madalina.rusu13@yahoo.com

Abstract. *This article aims to review the present EU regulation regarding natural gas markets and to see steps which have been made towards regulation of a UE common market of natural gas. Consequences of liberalization of price will be reviewed and lack of supply caused by Ukrainian – Russian War. The paper is also analyzing the different stages of the liberalization processes of the Gas Market and the benefits brought to the final consumers and to the industry.*

Keywords: EU regulation, gas market, free market, price liberalization, lack of gas supply

Introduction

Starting with 1996, UE decided to liberalize the internal energy market and, in this respect, measures were taken to address market access, transparency and regulation, consumer protection, supporting interconnection, and adequate levels of supply.

These measures aim to build a more competitive, customer-centered, flexible and non-discriminatory EU electricity market with market-based supply prices. In doing so, they strengthen and expand the rights of individual customers and energy communities, address energy poverty, clarify the roles and responsibilities of market participants and regulators and address the security of the supply of electricity, gas and oil, as well as the development of trans-European networks for transporting electricity and gas.

In the energy sector, completion of the EU's internal market requires: the removal of numerous obstacles and trade barriers; the approximation of tax and pricing policies and measures in respect of norms and standards; and environmental and safety regulations. The objective is to ensure a functioning market with fair market access and a high level of consumer protection, as well as adequate levels of interconnection and generation capacity (Facts sheets on European Union, 2021).

Literature review

Starting in the 90's EU and member states decided to gradually open the energy markets to competition and to make transition from monopoly / state-imposed price to liberalization (Dinca et al., 2021)..

In the gas market the first liberalization directive (First Energy Package) was adopted in 1998 and was transposed in member state internal regulation in 2000.

The process of law actualization on UE continues with the Second Energy Package which was adopted in 2003 and transported to national regulation in 2004 and 2007.

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According to these laws the industrial and domestic consumers were able to choose freely their gas provider on a competition premises.

The Second Package was amended in 2009 by the Third Energy Package which continues liberalization of the energy markets being the cornerstone for implementation of the internal energy market.

The Fourth Energy package introduces new electricity market rules to meet the needs of renewable energies and to attract investments. It provides incentives for consumers and introduces a new limit for power plants to be eligible to receive subsidies as capacity mechanisms.

It also makes it a requirement for the Member States to prepare contingency plans for potential electricity crises, and increases Acer's competences in cross-border regulatory cooperation when there is the risk of national and regional fragmentation (Dinca et al., 2022).

The fifth energy package, 'Delivering the European Green Deal ', was released on 14 July 2021 with the aim of aligning the EU's energy targets with the new European climate ambitions for 2030 and 2050; the debate on its energy aspects is ongoing.

For promoting cooperation between national Regulatory Authorities, transmission and distribution operators, established the Agency for Cooperation of Energy Regulators and European Network Transmission Systems Operators (ENTSOs).

In addition, Regulation (EU) 2016/1952 improves the transparency of gas and electricity prices charged to industrial end-users by obliging Member States to ensure that these prices and the pricing systems used are communicated to Eurostat once or twice a year. In October 2011, the EU adopted Regulation (EU) No 1227/2011 on wholesale energy market integrity and transparency (REMIT) aiming to guarantee fair trading practices on European energy markets.

Regulation (EU) 2017/1938 was adapted in 2010 and revised in 2017 in order to prevent and create response procedures for safeguarding oil and gas supply in the EU.

Directive (EU) 2019/962 refers to cross-border gas pipelines in order to increase security of supply in the EU.

Different stages of the liberalization process of the Gas Sector in the EU countries were analyzed in many studies in the past decade. Thus, Andersen and Siter (2009) argue that, in Norway, until 1990 energy was considered a major failure in the EU, but after 1992, the Gas Market was liberalized through an ambitious program and the impact on final consumers was positive. Other papers (Pepermans, 2019; Cerovic et al., 2009; Neumann and von Hirschhausen, 2004) are analyzing the different stages of the liberalization processes in the selected countries of Europe and the main conclusions are that liberalization of the Gas Market brought significant benefits to the industry and to the final consumers.

At the Romanian level, the Liberalization process of the Gas Market was also analyzed in many recent papers. Nedelcu and Busu (2022) made an overview of the Romanian Gas Market in the context of the liberalization process. The authors are making an analysis of the liberalization process after 1989, mentioning that the Gas Market was gradually opened to competition as an integral part of the national economy and free movement of goods and services and liberalization concept. The liberalization process was also analyzed (Busu, 2020) through the concentration degree indicators.

Review of the legislation

UE Common Regulation

UE Directive 2007/73/CE established common regulation regarding transport, distribution, supply and storage of natural gas, market organization / activity and licensing rules.

According to their internal organization, member states should assure that entities functioning in the gas market, respect UE Directive 2007/73/CE in order to facilitate the creation of a secure, reliable, sustainable, competitive and environment protective market, without any discrimination regarding their rights and obligations.

The member states should take all needed measurements in order to protect final customers, focusing on vulnerable customers.

Internal legislation should be amended in order to guarantee to all customers the right to procure the gas from any available supplier, no matter the residence so far, the commercialization and balancing rules are applied.

UE decided after discussion with all relevant parties including member states, Regulatory Authorities, consumers organizations, suppliers' organization a clear and concise control list for European energy consumers in connection with their rights.

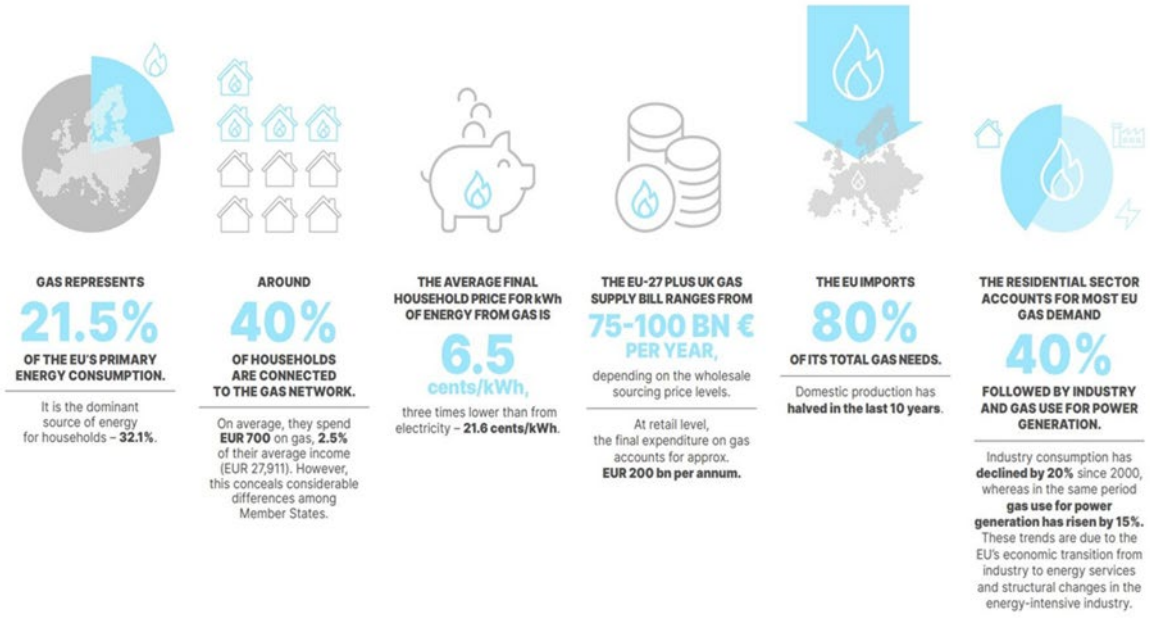


Figure 1. Estimated prices for the selected types of energy

Source: National Regulator on Energy Market.

According ACER, at the level of 2021, in European Union:

- Gas represents 21.5% of EU's **primary energy consumption**. It is the dominant source of energy for households (32.1%).
- Around 40% of **households** are connected to the gas network. On average, they spend EUR 700 on gas, 2.5% of their average income (EUR 27,911). However, this conceals considerable differences among Member States.
- The average **final household price** for kWh of energy from gas is 6.5 cents/kWh, three times lower than from electricity (21.6 cents/kWh).
- The EU-27 plus UK **gas supply bill** ranges from EUR 75-100 bn per year, depending on the wholesale sourcing price levels. At **retail** level, the final expenditure on gas accounts for approx. EUR 200 bn per annum.
- The EU **imports** 80% of its total gas needs. **Domestic production** has halved in the last 10 years.

- The residential sector accounts for most EU **gas demand** (40%), followed by industry and gas use for power generation. **Industry consumption** has declined by 20% since 2000, whereas in the same period gas use for power generation has risen by 15%. These trends are due to the EU's economic transition from industry to energy services and structural changes in the energy-intensive industry. (ACER site accessed, 2022 – view 1st of November 2022)

Regulatory Authorities

Each member state establishes a sole Regulatory Authority as a rule. They guarantee its regulatory independence, and look to its activity to be transparent and impartial.

When performing its regulatory duties, Authority must:

- Be independent legal and functional
- Be sure that its management is personal and free from market interest and does not accept any instructions from any state or authorities.

In order to protect Regulatory Authorities independence, states assure separate annual budgets and its management are elected for a maximum two mandates between five to seven years.

In order to achieve their regulatory scope Regulatory Authorities, take all reasonable measures in order to:

- Promote a tide of cooperation with Regulatory Authorities from other countries in order to assure a secure, reliable, environment neutral and competitive gas market for the benefits of all participants.
- Promote the development of regional, functional and competitive markets
- Eliminate all trade restriction on gas market between member state and development of trans-frontier transport capacities in order integrate local gas markets
- Promote energy efficiency and utilization of renewable energy
- Stimulate efficient system operators
- Give advantages for final customers as a result of competitive market
- Achieve high standards of public gas service

Among the most important prerogatives of internal Regulatory Authorities, we can mention:

- to establish transparent transport and distribution tariffs and their methodology
- to cooperate with member states Regulatory Authorities and in ACER in connection with trans-frontier gas matters
- to yearly report its activity to Commission and ACER
- to guarantee that no cross subventions are given for transport, distribution, storage and supply activities
- to monitories the efficiency and opening of gas markets, competition level, tariffs and all other aspects in connection with market competition
- to monitories the appearance of restrictive practices, including exclusivity clauses which can prevent important non -housekeepers client s to have simultaneously more than one supply contract

Distribution operators

According to Directive 2009/73/CE member states should establish one or mode distribution operator having in view efficiency and balance of the system.

Every distribution operator is responsible to assure long term operation of the system and to satisfy any reasonable demands for production, maintenance and development in order to assure efficient development of the distribution system operated.

When a distribution operator also assures balancing services, the rules which are applied by it must be transparent and non-discriminatory, inclusive of the tariffs in case of an unbalanced situation in the network.

In case a distribution operator is an undertaking vertically integrated, the distribution operator must be independent at least legally, as organization and decisional competence. This must lead to integral separation of activities of the distribution operator from its undertaking.

Transport and system operators. Storage operators

According to UE Directive 2009/73/CE the term of transportation refers to the natural gas transportation system through high pressure pipes, different from the network of supplies pipes and local distribution system.

Transport and system operators designate a physical or legal person which is performing the transport activity and if it is necessary take care of extraction, maintenance and development of the transportation system in the designated zone. It also assures interconnection with other systems.

Companies which own a transport system and have been certificated by national Regulatory Authorities that undertakes the demands stipulated in article 9 of Directive 200/73/CE are approved and designated by member states as transport and system operators. Licensing as transport and system operators should be notified to the Commission and publish UE Official Journal.

Regulatory Authorities permanently monitor that transport and system operators fulfill the licensing demands.

According to UE law each transport, system and storage operator must explore, maintain and develop transport and storage networks, in order to promote a free, non-discriminatory, well-informed market for all participants.

According to UE demands transport and system operators should build an enough trans-frontier capacity in order to integrate the European transport infrastructure, in order to honor all connection / production / consumption demands. In order to prevent or solve the unbalancing events transparent, objective, non -discriminatory rules must be applied.

Member states or Regulatory authorities can ask transport and system operators to fulfill minimum demands for maintenance and development of transport and interconnection systems.

Member states can also decide to appoint an independent system operator as well; it fulfills all requirements established by UE and internal regulator.

Independent system operator is responsible for granting and managing the access of the third persons, including the collection of access taxes and the incomes resulting from management of congestions occurred during exploitations, maintenance and development of transport system, as well for warranty on long term premises that the system will satisfy the reasonable connection demands through its investments.

When an independent system operator is designated, the owners of the transport system and storage operators which are integrated must be at least legally and decisional independents. This restriction is applied only to storage operators which are needed in order to provide an efficient access of market participants.

The European Commission may adopt guidelines in order to guarantee effective and full compliance by the owner of the transport system and the storage operator the regulation regarding their independence.

Transport and system operators must have a supervisory board responsible for decisions with major impact to shareholders assets, especially for those that implies the approval of annual and long term budgets, loan and dividends policies.

Member states must give assurances that the transport and system operators establish and apply a conformity program which should define the adopted measurements in order to exclude non-discriminatory behavior and assure permanent monitorization of the above said program.

Conformity program is approved by Regulatory Authorities and is monetarized also by a conformity agent.

The conformity agent is nominated by a supervision entity and is approved by Regulatory Authorities. The Regulatory Authority could refuse agent approval only when independence or professional issues could be invoked.

Conformity agent presents to the Regulatory Authority the proposition regarding investment plan or specified investment on the network.

Regulatory Authority approves work condition, labor contract and period of the mandate

According to EU regulation, the transport and system operators set out and publish procedures and efficient and transparent tariffs in order to assure a non-discriminatory connection of storage facilities, LPG de-gasifying facilities and industrial clients of the transport system.

There is not allowed the refusal of new storage facilities, LPG degasification facilities or industrial clients by invoking future limitation of the system or supplementary cost for increasing system capacity, the transport and system operator being obliged to assure enough possibilities to supply or consume from the system.

Conclusions and recommendation

The desire of achieving a common energy market, based on a common electricity and gas market, was one of the main goals which constitute the foundation of CEE and after that of UE.

In order to achieve this goal, UE's and national members' state legislations have been adopted and harmonized in order to create a common market regulatory framework, institutions and operators.

Creation of a common legal system was created during years in several steps having as final goal creation of a single common gas market in all UE.

The internal gas market's final goal is to assure free access to the markets for all participants and to prevent exclusive practices for non – household consumers.

The creation of a common market has also some side effects which manifest until the free market mechanism eliminates them.

One of them, which manifests very intensely nowadays, is the important increase of the prices.

This price increase is a result of cumulative causes but the most important is price liberations and possible lack of supply estimation caused by Russo – Ukrainian war.

First cause can be counteracted by energetic measures taken by national Regulatory Authorities to settle a reasonable price for a reasonable limited consumption for housekeepers and for non-household clients at least for several mounts.

To overpass lack of supply of Russian gas, energic measurements should be taken in order replace this gas with:

- gas coming from Azerbaijan through Turkey, Greece and Bulgaria. Azerbaijan gas export capacity to Europe is about 10 billion metric cub per year and can be increased to 200 billion metric cub by upgrading the existing compression stations and building two more.
- increase of Norway production and supply. In 2022 Norway gas estimated production is 122 billion cubic meters which is exported mainly in UE
- LPG coming from Qatar increase to $9.2 billion in August 2022, and increase of 100.6% from last year
- USA have risen by a total 1.23 mt per year by mid –July, equivalent or more 27 very large gas carriers' vessels (Bernstein et al., 2016)
- fastening of Black Sea extractions and delivery which can about 1 billion cubic meters

References

Andersen, S. S., & Sitter, N. (2009). The European Union gas market: Differentiated integration and fuzzy liberalization. *Political economy of energy in Europe*, 63-84.

Bernstein, P., Tuladhar, S. D., & Yuan, M. (2016). Economics of US natural gas exports: Should regulators limit US LNG exports? *Energy Economics*, 60, 427-437.

Busu, M. (2020). An Analysis of the Concentration Degree of the Natural Gas Sector in Romania. In *7th SWS International Scientific Conference on Social Sciences ISCSS 2020* (pp. 181-188).

Cerović, L., Donadić, M., & Galović, T. (2009). Liberalization of EU gas sector: impacts and perspectives for future development. *Poslovna izvrsnost*, 3(1), 77-93.

Dincă, V. M., Bogdan, A., Vasiliu, C., & Zamfir, F. (2021). The Influence of Romanian Mobile Commerce Companies on Developing Green Innovation. Sustainability, 13(18), 10075.

Dincă, V. M., Busu, M., & Nagy-Bege, Z. (2022). Determinants with Impact on Romanian Consumers' Energy-Saving Habits. *Energies*, 15(11), 4080.

European Commission, 2020 – *COM (2020) 0824-Proposal for a regulation of the European parliament and of the council on guidelines for trans-European energy infrastructure and repealing Regulation (EU) No 347/2013.*

European Commission, 2016 – COM (2016) 0860 - *Communication from the commission. Clean energy for all Europeans.*

European Commission, 2015 – COM *(2015) 80 –Energy Union Package.*

European Commission, 2014 – *COM (2014) 0330 Communication from the Commission to the European parliament and the council . European energy security strategy.*

Neumann, A., & von Hirschhausen, C. (2004). Less long-term gas to Europe? A quantitative analysis of European long-term gas supply contracts. *Zeitschrift für Energiewirtschaft*, 28(3), 175-182.

Nedelcu, A. C., & Busu, M. (2022). An Overview of the Gas Market in Romania in the Context of the Liberalization Process. *Revista de Management Comparat International/Review of International Comparative Management*, 23(2), 231-241.

Official Journal of the European Union L158/125, 2019 - *Directive (EU) 2019/944 of the European parliament and of the council of 5 June 2019 on common rules for the internal market for electricity and amending directive 2012/27/EU(recast)*

Official Journal of the European Union L158/54, 2019 - *Regulation (EU) 2019/943 of the European parliament and of the council of 5 June 2019 on the internal market for electricity(recast).*

Official Journal of the European Union L158/22, 2019 - *Regulation (EU) 2019/942 of the European parliament and of the council of 5 June 2019 establishing a European union agency for the cooperation of energy regulators.*

Official Journal of the European Union L158/1, 2019 - R*egulation (EU) 2019/941 of the European parliament and of the council of 5 June 2019 on risk-preparedness in the electricity sector and repealing directive 2005/89/EU.*

Official Journal of the European Union L 123/18, 2019 - *Directive (EU) 2019/713 of the European parliament and of the council of 17 April 2019 on combating fraud and counterfeiting of non-cash means of payment and replacing council framework decision 2001/413/JHA*

Official Journal of the European Union L 122/1, 2019- *Commission delegated regulation (EU) 2019/715 of 18 December 2018 on the framework financial regulation for the bodies set up under the TFEU and EURATOM treaty and referred to in article 70 of regulation (EU, EURATOM) 2018/1046 of the European parliament and of the council.*

Official Journal of the European Union L117/1, 2019- Directive (EU) 2019/692 of the European parliament and of the council of 17 April 2019 amending directive 2009/73/EC concerning common rules for the internal market in natural gas.

Official Journal of the European Union L326/1, 2017- *Regulation (EU) 2017/1938 of the European parliament and of the council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing regulation (EU) no 994/2010.*

Official Journal of the European Union L 311/1, 2016 - *Regulation (EU) 2016/1952 of the European parliament and of the council of 26 October 2016 on European statistics on natural gas and electricity prices and repealing directive 2008/92/EC.*

Official Journal of the European Union L115/39, 2013- Regulation *(EU) No 347/2013 of the European parliament and of the council of 17 April 2013 on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/EC and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009 Regulation (EU) No 347/2013.*

Official Journal of the European Union L326/1, 2011- *Regulation (EU) no 1227/2011 of the European parliament and of the council of 25 October 2011on wholesale energy market integrity and transparency.*

Official Journal of the European Union L 293/67, 2010- *Commission decision of 10 November 2010 amending chapter 3 of annex i to regulation (EC) no 715/2009 of the European parliament and of the council on conditions for access to the natural gas transmission networks.*

Official Journal of the European Union L265/9, 2009- *Council directive 2009/119/EC of 14 September 2009 imposing an obligation on member states to maintain minimum stocks of crude oil and/or petroleum products.*

Official Journal of the European Union L211/94, 2009- *Directive 2009/73/EC of the European parliament and of the council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing directive 2003/55/EC.*

Pepermans, G. (2019). European energy market liberalization: experiences and challenges. *International Journal of Economic Policy Studies*, 13(1), 3-26.