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## The Interdependence Between the Creation of Gas Exchanges and the Factors of European Integration<sup>1</sup>

**Abstract**

The purpose of this paper is to identify the prerequisites for the creation of gas exchanges in the European gas market in the process of European integration and to identify the impact of strengthening market mechanisms on Ukraine's attractiveness to the EU in this context. In line with this goal, the author has found that the creation of gas exchanges was a direct consequence of European policy documents aimed at liberalizing and building a single internal natural gas market. This is evidenced by the emergence of gas exchanges in European countries over the past twenty years with the introduction of three energy packages. It is argued that gas exchanges and hubs are essential elements of a liberalized gas market, as they ensure its functioning on a competitive basis in accordance with the functions and principles of their activities. The Directives do not directly prescribe the requirements for the establishment of gas exchanges. However, the principles of liberalisation, third-party access, promotion of competition in the energy market and attraction of many sellers and buyers are implemented with the functioning of the gas exchange institute. The author discusses the impact of strengthening market mechanisms on Ukraine's attractiveness to the EU. The measures taken by Ukraine to implement the requirements of the Third Energy Package, together with the potential creation of a gas hub, will contribute to its attractiveness as a reliable partner and a full-fledged player in the gas market, capable of contributing to the achievement of energy security for European countries.

**Keywords**

natural gas, gas exchange, energy directives, European integration, Ukraine

**JEL:** N24, N74



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**1 Introduction**

The creation of an exchange segment of natural gas trading in Ukraine is relevant due to the essential role of the exchange institution in the formation of the market economy. In addition to the market component, the development of gas exchange trading is an essential condition for accelerating European integration, given the need to implement EU energy legislation to create a transparent, competitive market environment and expand gas supplies. This is a regulatory factor in the development of exchange trading. The role of this regulatory factor is embodied in the Gas Target Model (GTM) framework concept announced as part of the Third Energy Package. The

GTM envisages the removal of cross-border barriers to the free movement of gas across Europe. As a result, the markets of 28 countries are expected to operate according to a common set of rules and practices.

In view of the above and the fact that gas exchanges are an essential element of the liberalised gas market, the link between the establishment of gas exchanges and the European integration process requires a thorough analysis.

The *purpose* of the paper was to identify the prerequisites for the establishment of gas exchanges on the European gas market in the process of European integration and to show the impact of the strengthening of market mechanisms on the attractiveness of Ukraine for the EU in this context.

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## 2 European Policy Documents as a Prerequisite for the Establishment of Gas Exchanges

The boom in the creation of gas hubs and exchanges in Europe in the 2000s (Kurbet, 2022) is closely linked to the establishment of a single European natural gas market, in particular the implementation of the relevant EU directives and regulations aimed at market liberalisation. Until this period, the energy policy of the European Union was complex and sometimes the energy issue was not a serious concern and was not included in the EU agenda. There have been several attempts to create a supranational energy policy. However, they failed because member states sought to maintain a monopoly position and tight control over energy, a sector of strategic geopolitical and economic importance (Eberlein, 2008). In general, the national interests of the EU member states were so divergent that cooperation in the energy sector, let alone the construction of a common internal market, was not considered necessary (Andersen, 2001). In the early stages of the formation of the internal market (see Figure 1), the convergence of national interests was not observed either. Therefore, as R. Yukhymets rightly noted, liberalisation did not occur as a

natural result of the development of the gas market (Yukhymets, 2021).

The realisation of the internal market was to be achieved through three main policy instruments: specific energy directives to remove barriers to competition and trade; general internal market directives that would also apply to energy; and existing competition law applicable to the energy sector (Andersen, 2001).

The basis for the internal market was the Single European Act of 1987 and the subsequent implementation of the Directive on increasing the transparency of gas and electricity prices charged to industrial end-users in 1990 and the Directive on the transit of natural gas through networks in 1991.

A breakthrough in gas market liberalisation began in the late 1990s with the successful implementation of three EU gas directives. These measures aimed to: create new business opportunities and increase cross-border trade in order to achieve progress in the efficiency of the energy sector and the competitiveness of the European economy, as well as to promote security of supply and sustainable development (Renou-Maissant, 2012). They also aimed to create competition, strengthen market linkages

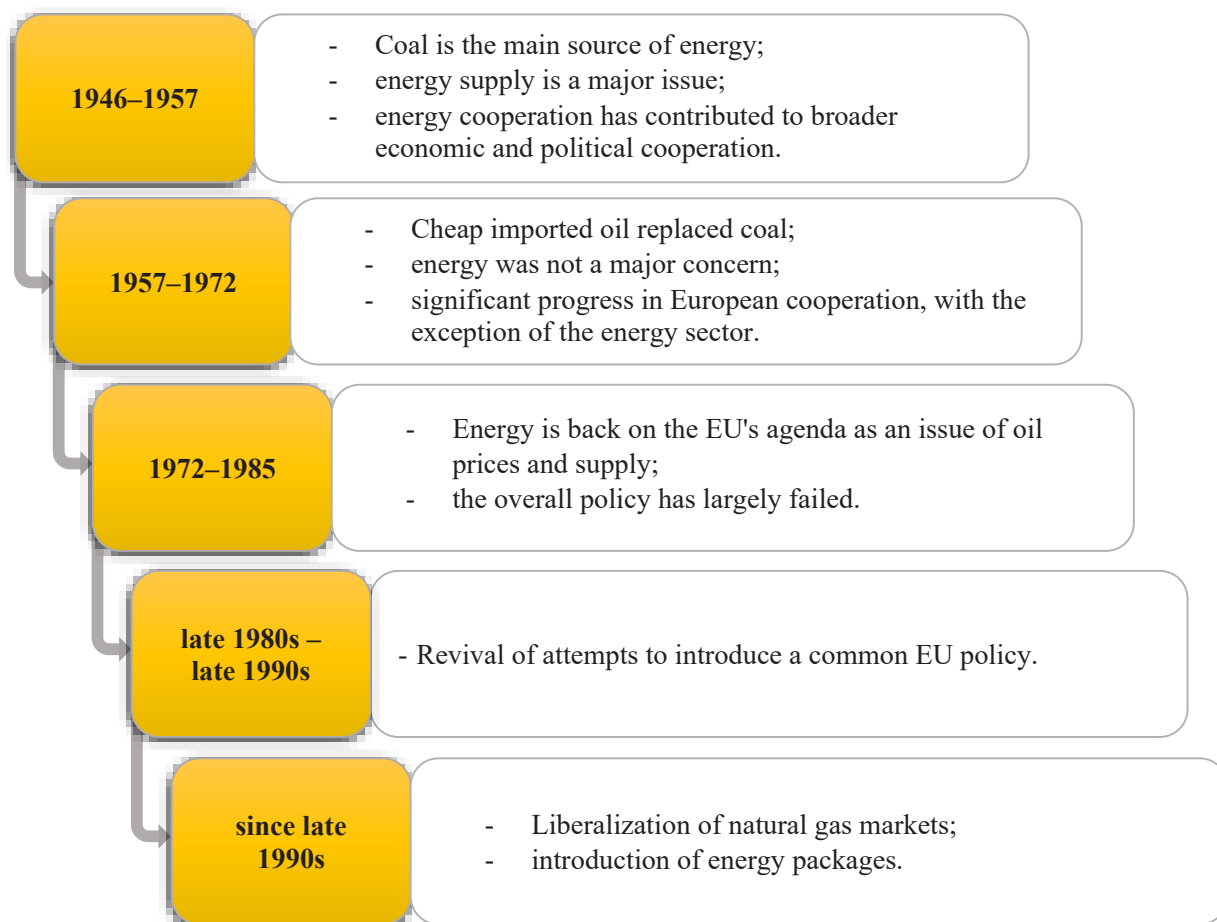


FIGURE 1 Stages of the EU energy policy

Source: compiled according to (Andersen, 2001)

and move towards hub trading and pricing (Broadstock et al., 2020). Each successive directive addressed the shortcomings of the previous one and replaced it.

The *First Gas Directive 98/30/EC* established standard rules for the internal market, which, according to Haase, resembled "a mosaic of national markets with very different regulatory regimes" (Haase, 2008). Its implementation contributed to the gradual introduction of competition through practical measures aimed at all links in the gas production and sales cycle, constant monitoring of the implementation of these measures and regular reporting on the progress of liberalisation.

In addition to the benefits, such as increased competition and efficiency in the functioning of the gas market, reduced scope for increases in retail prices and improved quality of service, the implementation of the First Directive also had some drawbacks. The most important of these were: increased risks to security of supply associated with the imperfection of market mechanisms, mergers and acquisitions of gas companies and their entry into related sectors. This created risks of narrowing the competitive environment and strengthening monopolistic tendencies (Dyachenko, 2013).

The implementation of the *Second Directive 2003/55/EC* has accelerated and deepened the move towards opening access to third parties through unbundling (separation of gas transport from production and supply). Therefore, it was aimed at eliminating the shortcomings of the First Directive. However, one controversial provision remained: "It is important, however, to distinguish between such legal separation and ownership unbundling. Legal separation does not imply a change in the ownership of assets and there is nothing to prevent similar or identical employment conditions being applied throughout the vertically integrated undertakings." (Directive 2003/55/EC, n.d.) Despite progress in liberalisation, the level of competition was insufficient and markets were mainly national (Dyachenko, 2013).

The First and Second Energy Packages aimed to develop infrastructure, gas installations, retail supply, transmission and distribution. They were designed to allow industrial and domestic customers to freely choose their gas supplier in a competitive market. Therefore, the *Third Directive 2009/73/EC* was introduced in 2009, which strengthened unbundling requirements and clarified the roles and responsibilities of national regulators to ensure greater transparency of market operations (Directive 2009/73/EC, n.d.). It stated that pipelines connecting EU countries with third countries must be subject to EU Regulations. The *Agency for the Cooperation of Energy Regulators* (ACER) was also set up.

In 2019, the Fourth Energy Package began to be implemented. It aims to facilitate the transition from fossil fuels to cleaner energy and reduce greenhouse gas emissions.

### **3 Requirements for EU Countries to Establish Gas Exchanges and Revision of European Program Documents**

The nature of directives was that they were not rigid rules. Member States could develop appropriate regulatory regimes to allow the industry to adapt to the specificities of the market. Point 7 states: "The internal market in natural gas must be established gradually in order to allow the industry to adapt to its new environment in a flexible and orderly manner and to take account of the different market structures in the Member States." (Directive 98/30/EC, n.d.) Member States were thus free to choose the instruments they used to implement the provisions of EU law. By definition: "Directives are binding on the Member States as to the results to be achieved; they must be transposed into the national legal framework and thus leave room for manoeuvre as to the form and means of implementation." (Haase, 2008) Regulations do not offer such flexibility. They are directly applicable and binding on all Member States.

Article 17(2)(g) of the Third Directive provides for "the creation of appropriate joint ventures, including with one or more transmission system operators, *gas exchanges* and other relevant actors, with the aim of furthering the creation of regional markets or facilitating the liberalisation process" (Directive 2009/73/EC, n.d.). According to the Third Energy Package, the architecture of the European gas market includes the following: a set of market zones organised according to the principle of connected vessels; the division of the commercial gas market and the market of gas transport capacity; forms of transport tariffs according to the "entry/exit" principle, where the GTS operator of the zone is responsible for transport within the zone; *a virtual trading platform* (hub and/or exchange) is located within each zone; zone balancing; the ability of the producer to supply gas to final consumers (Dubovskiy, 2018).

Given the nature of such documents as Directives and the wording above, the Directives do not directly require the establishment of gas exchanges. However, exchanges have emerged in many countries over the last twenty years precisely because of the increasing liberalisation of gas markets. According to the Council of European Energy Regulators, the creation of gas exchanges in recent years "is a quasi-necessary step in markets where different types of market participants have the ability to decide their level of production and demand as well as their transaction counterparties. <...> Energy exchanges contribute to the creation of an efficient and liquid wholesale energy market, as called for by the European Commission. As they are open to all participants, provide price signals for standardised products and offer anonymous transactions, they play an important role in creating more transparency and competitive prices

that foster competitiveness in the internal market. They also help to provide appropriate price signals to identify potential security of supply or, in particular, generation adequacy problems." (Council of European Energy Regulators, 2011)

Therefore, the establishment of gas exchanges is a consequence of the implementation of the European programme documents, as the exchange is an institution that ensures the implementation of the principles aimed at the implementation of these documents. Liberalisation, third party access, competition in the energy market and many sellers and buyers are realised when the gas exchange institute functions (see Figure 2).

One of the requirements of the Third EU Directive is for Member States to establish regulatory authorities. They must be independent of energy industry or government interests and have defined powers and resources. These regulators are required, among other things, to ensure non-discriminatory third-party access to infrastructure through a regulated and transparent tariff system (Haizmann et al., 2018).

In 2011, the European Commission, the European Parliament and the Council adopted the

*Regulation on Wholesale Energy Market Integrity and Transparency (REMIT)*. REMIT defines a framework for identifying and penalising insider trading and market manipulation, along with the monitoring of wholesale energy markets in the EU by ACER and national regulators following EU financial legislation and taking into account the interaction with CO<sub>2</sub> markets (Council of European Energy Regulators, 2011; Regulation (EU) No 1227/2011, n.d.). Consequently, European gas markets are controlled by national regulators and ACER within the regulatory framework defined by REMIT.

A reference document of sorts that can be used alongside REMIT is the CEER Recommendations on Regulatory Oversight of Energy Spot Exchanges. These recommendations, developed at the request of the European Commission, are based on the study on regulatory oversight of energy exchanges. CEER's recommendations relate to governance, transparency, market oversight, monitoring and cooperation. The CEER has defined conditions that market participants have to meet in order to trade on the exchanges, such as: conclusion of a contract, entry fees, credit assessment and other additional requirements.

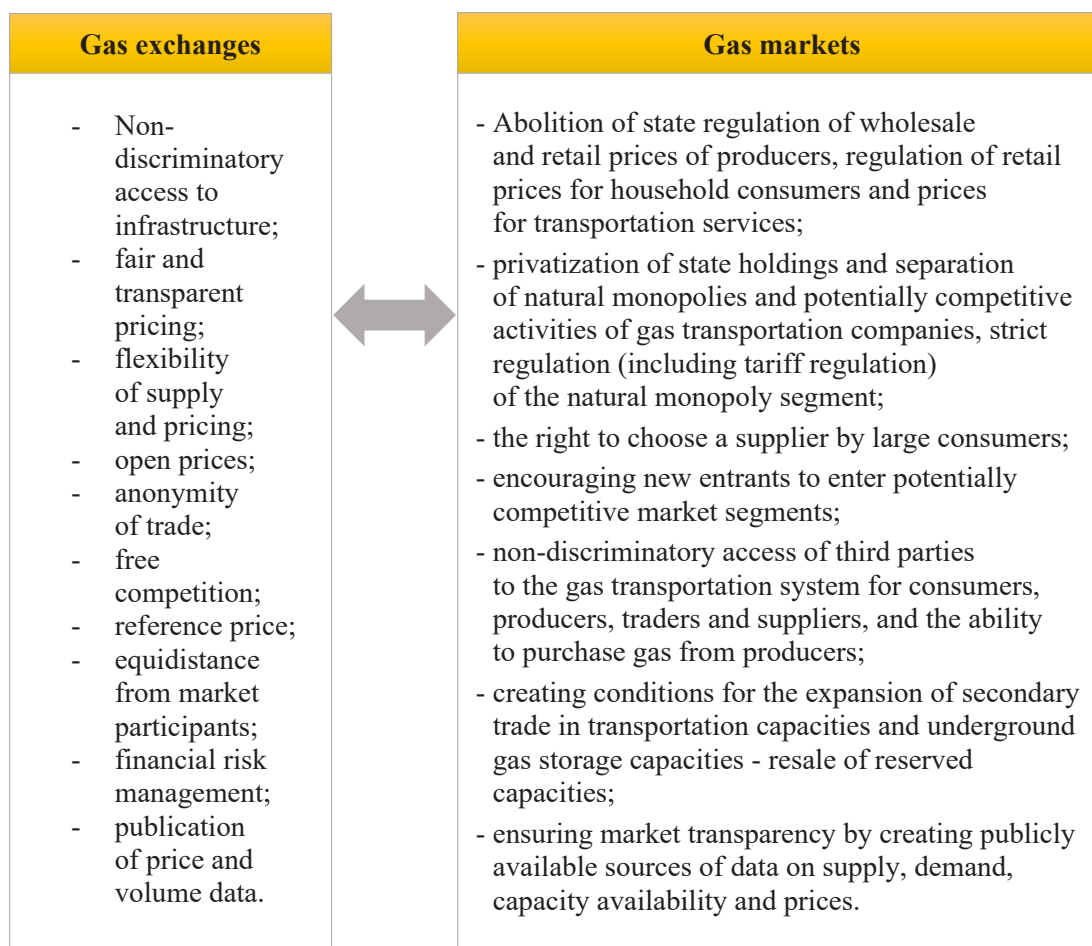


FIGURE 2 Correlation of the principles and conditions of gas market deregulation with the principles of gas exchanges

Source: complied according to (Heather, 2015; Dubovskyi, 2018; Yukhymets, 2021)

#### 4 European Integration Processes and Gas Exchange in Ukraine

For a long time, Ukraine's natural gas market remained monopolised by large state-owned energy companies with an imperfect organisational structure and ineffective methods of state control and regulation. Attempts to reform the national gas market were limited to redistribution of regulatory powers and control over financial flows. The creation of competitive conditions was not aimed at changing any segment of the market. The corporatisation of individual market entities, the replacement or introduction of new market participants only affected the formal market structure, while there were no changes in the institutional environment that could motivate market participants to change their behaviour. At the same time, the intensification of climate policy in Western countries and the modernisation of EU legislation in this area had an impact on Ukraine. It forced the government to speed up reforms of the gas market to bring it closer to European requirements.

Ukraine is not obliged to implement the Third Energy Package under the Association Agreement. However, it is trying to do so within the framework of the Treaty establishing the Energy Community, which is an important step towards the EU. In addition, two memoranda of understanding have been signed with the EBRD to support the development of exchange trading on the European model.

Thus, according to the Third Energy Package, the main steps for reforming the Ukrainian gas market are as follows: de-monopolisation and liberalisation of the energy markets in the interests of consumers; reform of the corporate governance of the state-owned companies of the energy market operators; unbundling; creation of a fully-fledged national gas market.

The implementation of the Third Energy Package in Ukraine started in 2014. As a result, the monopoly of Naftogaz was dismantled, the TSO was separated from other parts of the company, and a gas exchange was created. The result of the European integration processes in the energy sector should be the achievement of energy security, quality services and institutional integration of the Ukrainian energy markets into the European ones (Heather, 2021).

The Gas Exchange, as a vital institution of the gas market, ensures competitive relations and implements the principles of liberalisation and the creation of a single gas market, such as: transparent pricing

mechanism, increased competition, abandonment of non-market interaction systems.

The liberalisation of the gas market in Ukraine also creates the conditions for the creation of a gas hub. Until recently, this was seen as a factor in achieving energy security. Russia's full-scale invasion of Ukraine has cast doubt on this claim. However, there are reasons to believe that the creation of a gas hub would still contribute to Ukraine's energy security. At the same time, the presence of a gas hub as one of the elements in the architecture of the gas region (following the Third Energy Package) will prove the existence of a regional market and contribute to further integration into the European market, as well as help solve the problem of European countries' dependence on Russian gas.

#### 5 Conclusions

The EU's energy policy has undergone significant changes in recent decades. It has shifted from the pursuit of liberalisation and the creation of a competitive gas market to addressing security of supply issues and, finally, climate change and decarbonisation of the economy. At the same time, the changes that accompanied the implementation of the energy packages led to the development of gas exchanges and hubs and a gradual but profound change in prices in European countries.

The establishment of gas exchanges was an important factor in the European integration process, as the European programme documents provide for the creation of a single internal market for natural gas. Despite the fact that the requirement to establish gas exchanges is not prescribed at the level of directives, the principles of liberalisation, third-party access, promotion of competition in the energy market, attraction of a large number of sellers and buyers are implemented with the functioning of the gas exchange institute. In its pro-European aspirations, Ukraine, as a member of the Energy Community, is in the process of harmonising its energy activities with the EU gas directives.

Under the conditions of a full-scale war in Ukraine, the possibilities for the systematic introduction of an organised natural gas market under martial law are significantly limited and depend on further events. Nevertheless, the fulfilment of the conditions of the Third Energy Package, the introduction of a gas exchange and the creation of a gas hub could confirm Ukraine's status as a full member of the European internal market and deepen its economic ties with the EU.

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