

THE IMPACT OF UKRAINE'S FINANCIAL COOPERATION WITH THE IMF ON THE REFORMATION OF THE ENERGY MARKET AND PRICE POLICY IN THE FIELD OF GAS SUPPLY

Iryna Vasylichuk

Associate Professor, DSc, Kryvyi Rih Economic Institute of Kyiv National Economic University named after Vadym Hetman,
e-mail: vasylichuk_ip@kneu.dp.ua, orcid.org/0000-0002-7872-2738, Ukraine

Iryna Yegorova

Associate Professor, PhD, Kryvyi Rih Economic Institute of Kyiv National Economic University named after Vadym Hetman,
e-mail: yegorova_ig@kneu.dp.ua, orcid.org/0000-0002-7800-2810, Ukraine

Natalia Suzdal

Master`s student, Economics, Polonia University in Czestochowa,
e-mail: natiyasuzdal@gmail.com, orcid.org/0000-0002-2867-5320, Poland

Abstract. The research identifies necessity to implement the requirements established by the International Monetary Fund, as the need for a new tranche from the fund may lead to the implementation of uneffective policy in the gas market of Ukraine. The current competitive environment in the gas market of Ukraine has been analyzed. The article estimates the expediency of increasing gas prices in Ukraine to the market level and the possible effects of such solution for the retail customers. The comparison of the price environment on the markets of the European Union and the domestic market is carried out. Authors determine forecasted volume of the country's capacities in the gas industry and offer possible ways for the future development of the gas industry of Ukraine.

Keywords: IMF and Ukraine, gas industry, market price, economy of Ukraine.

DOI: <http://dx.doi.org/10.23856/3004>

Introduction

The European natural gas market has undergone significant transformational and structural changes over the past decade, Decentralization has led to separation of all stages of gas supply from gas production to transporting by local networks to the final consumer. All market participants got free and equal access to the gas-producing and transporting capacities. There has been a redirection to the practice of a qualified consumer when any gas consumer can independently choose a gas supplier. At the same time, Ukraine still remains in such conditions that the gas market is almost entirely dependent on natural monopoly companies and the competitive environment is not yet formed.

The feature of the Ukrainian gas market is that, with the possession a significant amount of gas fields, development remains at the initial level, and 30% of gas is imported from abroad by reverse directions. Under such conditions, Ukraine faces the need for a complete reform of its own gas sector. It can attract foreign investors to the Ukrainian gas market, which may be an important factor in stabilizing the gas industry and another impetus for its development.

Theoretical principles of market pricing for gas in the context of cooperation with the IMF

The market system should be characterized by the freedom of action of each market participant and a large number of both sellers and buyers. Monopolization of market systems is undesirable, especially in the utilities sector, where production reaches the scale of the country. Furthermore, none monopoly, natural or any other, is capable of selling services at market prices, because players in such a market are too limited. That is why foreign markets for gas production and gas supply changed considerably in recent years. Gradually, the global community departs from the full monopoly control over the gas industry and as a result arises a differentiation of tasks between different players in the market. The Law of Ukraine "On the Natural Gas Market", adopted in early 2015, was aimed at building-up of free-market and its demonopolization, as well as at increasing of competition level between suppliers. This will make it possible to reduce the price of natural gas for end-users and increase the efficiency of companies in this sector.

Ferdinand Pavel and Hanna Chukhray (*Pavel, 2006*) in their research note that the sale of gas to the households at a price calculated on the basis of standard costs of gas extraction, and not on the basis of market prices, undermines the development of gas extraction in Ukraine. Indeed, gas companies are exposed to alternative losses because the market wholesale price almost doubled the administratively set gas price for the civilians.

H. Antonenko, A. Zakharov, P. Kukhta, I. Piontkivska and M. Repko (*Antonenko, 2015*) have stated that after setting the market price "Ukrgazvydobuvannya" still will have funds for the extraction of gas from the old one and for the development of new gas fields even after the rent payment. This would stimulate an increase in the volume of own production.

K. Markevich and V. Omelchenko (*Markevich, 2016*) analyze the experience of pricing in the markets of the European Union and Ukraine.

Commitments under the Association Agreement with the EU and the Treaty establishing the Energy Community, as well as the signing of a Memorandum of Economic and Financial Policies with the International Monetary Fund, led to the beginning of transformation processes in the Ukrainian gas market. However, the competitive environment is still at the primary level. Therefore, the choice of researching strategies for effective pricing and further changes in the structure of the gas market is a priority.

Problem statement. The purpose of the article is to analyze the impact of Ukraine's financial cooperation with the IMF on the reformation of the energy market and price policy in the field of gas supply.

Analysis of the gas prices formation and development of Ukraine's energy strategy in accordance with the IMF's requirements for the reorganization of the gas market

Material presentation and results. For a long time there were intensive discussions about the need for Ukraine to receive funding from the IMF. Doubts about the effectiveness of Ukraine's interaction with the IMF arise mainly because of a number of established requirements which have to be performed to obtain the next tranche (in particular, those related to raising the gas price and implementing a pension reform). However, it is impossible for Ukraine to abandon external financing at all, even despite the requirement to raise utility bills, because, the main threat to the Ukrainian economy is the further payment of external

debt. In general, Ukraine has a huge debt burden until 2020. Over the next 3 years, Ukraine has to pay 22 US billion dollars. In addition, in 2021 Ukraine will have to pay more than 10 US billion dollars in external debt in one year, resulting from the restructuring of external debt in 2015.

Nevertheless, the requirement to raise the gas price to the market level is sufficiently justified, as it is a factor that could form a competitive environment. Moreover, this requirement is provided along with further recommendations that could significantly affect the structure of the gas market of Ukraine (Fig.1).

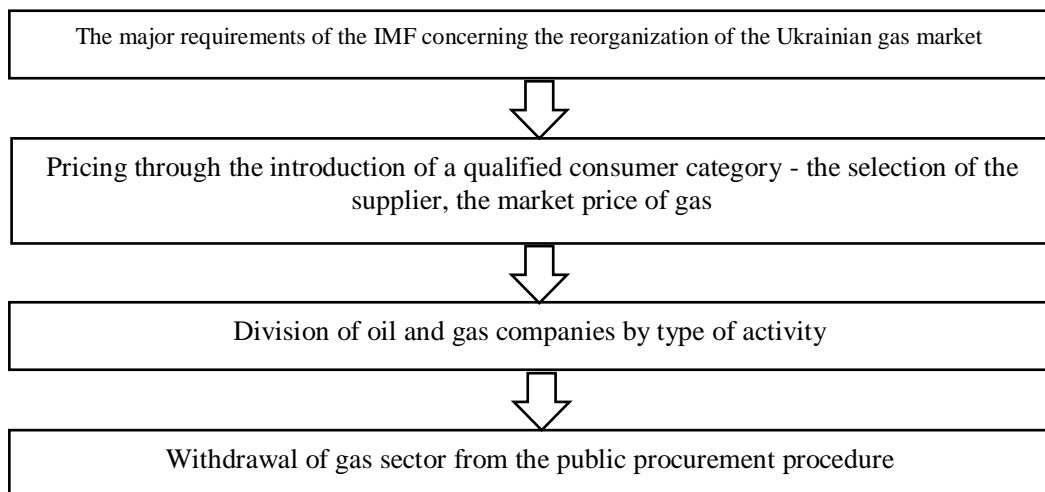


Fig.1. The major requirements of the IMF concerning the reorganization of the Ukrainian gas market*

* composed by authors

However, nowadays the gas market in Ukraine has not been formed yet. There are not enough supplying companies that would satisfy the conditions for the formation of a perfect market system (Dzoba, 2017), and the government's formula of tariffication for gas supplies to industry and private households leaves questions. In accordance, with the first gas price project, it was necessary to review prices every two years, so that the value for domestic gas would be par value to the price of imported gas.

From the point of view of economic science, the market price is considered to be the price at which demand is equal to the supply. In addition, there should be no subsidies or other interference on the market from the state. At the same time, there are monopolists in energy markets and, as a result the competition is limited. Therefore, the gas price is set by the state.

It can be argued that there is a world price for grain, coffee and coffee beans, oil products and oil, as well as steel, gold, silver and other metals. However, there is no world price for gas (Shraiber, 2017). This is due to the fact that the largest share of the gas cost price is the logistics costs of delivery to consumers (about 96 - 98%). Gas prices in the world differ not by 1-2%, as on world commodity exchanges, but by hundreds or even thousands of percent, precisely because of the radical differences in the cost of gas supply. More than 80% of the world's gas is supplied at contract prices set by the parties of this contract. Therefore, the cheapest gas is that, which is supplied from the well to the consumer.

However, it is never possible to equal the market price, which is offered in the market depending on demand and supply and the monopoly price set by the state. The stimulation of ukrainian private gas traders is not at high level. Because of this, Naftogaz and regional gas distribution companies are still the main in the energy market in Ukraine.

In addition, private vendors do not want to sell gas at a lower price than imported, or one that comes from own resources of Naftogaz. To date, the gas price, which is set for procurement from private gas-extracting enterprises, is 9850 UAH / thousand cubic meters (GDP included). At the same time, private traders supply natural gas to the large industrial enterprises for about 12000 UAH / thousand cubic meters. After September 1, 2018, the Naftogaz's natural gas price for industry together with GDP will be 12249-13338 UAH per thousand cubic meters, which is higher than private vendors offer.

Furthermore, Naftogaz includes the purchase of the gas from gas-extracting enterprises at its own expense, but the one who really pays for it is the final consumer. The price of gas should be set in parity, that is, be accessible to buyers and profitable for sellers.

12 million ukrainian households out of a total amount of 15 use gas for their needs. The price of 1.07 UAH / m³ was available to all. Rising prices to 6-7 UAH has led to a situation where at 45% of recipients of the subsidy about 30% of households do not pay bills at all. Only 25% of consumers can pay the gas bill, as established "market prices" are not available for 75% of households. Therefore, payments in the winter make up about 60-70% of the accrued charges. Debts increase year after year (from 8 billion UAH in 2015 to 42.7 billion UAH in March 2018).

The possible increase in the gas price is expected in three waves over next three years, with the last in 2020. There is a possibility that private traders will start competing with Naftogaz, selling gas to the households. But most likely, such efforts will fail and gas prices will not be significantly reduced.

The data presented by the portal Teplo.gov.ua, shows that the retail natural gas price for households is not "overwhelming" in comparison with the countries of Europe. The gas price for the retail costumers in Ukraine is: 1.7 times lower than in Romania; 2.4 times lower than in Latvia; 2.6 times lower than in Poland; 3.4 times lower than in the Czech Republic; 4.0 times lower than in Germany; 5.3 times lower than in Denmark. From that point of view, therefore, it might be noticed, that the gas price in Ukraine is the lowest, but the comparison of average wage level in Europe and in Ukraine preseted in Fig. 2. refutes this fact.

Thus, only gas bills will be more than half of the Ukrainian wage. And if we take into account that not all workers have salaries at 9200 UAH, the fact that with further increase in gas prices, it becomes obvious that the number of households that will be able to pay their bills may decrease for a couple of times.

The availability of energy and other utility services to the private households is usually determined by the maximum allowable share of energy costs and utilities in total household expenses (*Siddi, 2017*). Different countries have different values depending on economic and other conditions. In Ukraine, this threshold is 20%. Thus, with an average salary of \$ 327 and with an average price for utilities at \$ 246, the share of costs is 75%. And if we consider that the minimum wage is 3200 UAH, then the share of expenses exceeds it by 2.1 times. And this is without taking into account the costs of other utilities. The only way out of the financial crisis for population of Ukraine is still subsidies.

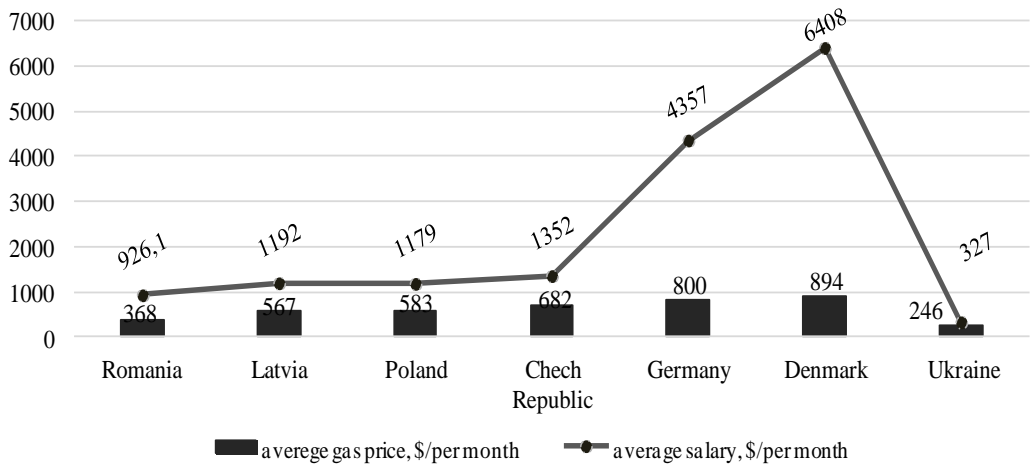


Fig. 2. The comparison of the average wage level and the average price per thousand cubic meters of gas in Ukraine and the countries of Europe (August 2018)*

* composed by the authors according to the data provided by the websites (*Reinis Fischer, Trading Economics and TeploGov*)

According to the position of the IMF, the main idea of raising the price level for gas was to create a competitive gas market. However, in today's realities, after the Government's revision of the formula for determining the gas price, it became practically impossible. Thus, the pricing formula excludes the cost of transportation from the NCG hub to the virtual point of supply in Slovakia (which is unprofitable for Ukrainian companies, since transit costs are not included), as well as from this point to the point of entry in Ukraine. The price was tied to quotations on the NCG period from April to September of each previous year. Under such conditions, no foreign gas or transit company will see the benefits of entering the Ukrainian market, as the purchase prices for the period April-September are usually the lowest. Thus, without competition, the market will remain monopolistic, as the main suppliers here are regional and city gas distribution companies. Moreover, in the new formula, the size of the allowance, which suppliers are able to charge from the population of Ukraine, will be increased fourfold- from 2.5% to 10%.

In the formula for calculating the gas price, neither devaluation of the hryvnia nor the possible growth of prices on the European market were taken into account. Therefore, it is possible that Naftogaz will buy imported gas at higher prices than indicated in the formula. Consequently sales price will also increase.

Originally, it was noted that all these changes were made in order to cover the deficit of "Naftogaz", because in the previous years it was covered from the budget of Ukraine. However, in fact, it turns out that the budget of Ukraine will suffer in any case. Moreover, the ability of the population to pay the utilities bills reduces with each increase in prices.

Table 1 presents the energy strategy of Ukraine with a division into three stages for 3, 5 and 10 years.

Table 1

Energy strategy of Ukraine for the period up to 2035*

Stage 1 Energy sector reform (3 years)	Stage 2 Optimization and Innovation Development (5 years)	Stage 3 Ensuring Sustainable Development of the Energy Sector (10 years)
<ul style="list-style-type: none"> - completing the integration of Ukraine into the European Network of Transmission System Operators for Gas (ENTSO-G); - reforming energy companies; - increasing the natural gas production; - creation of a coal products market; - a gradual decrease in the energy intensity of GDP to 0.2 tons of oil equivalent / thousand dollars; - increase in the share of energy from alternative sources up to 8%; - adherence to high ecological standards; - national emission reduction plan with a target of more than 5% 	<ul style="list-style-type: none"> - integration of Ukraine into European Network of Transmission System Operators for Electricity (ENTSO-E working mode); - implementation of investment projects within the scope of mineral oil refineries; - creation of local heat supply systems; - development of distributed generation of "intelligent" networks; - attraction of investments in the alternative energy sector; - modernization and improvement of tracking systems that collect data on their own energy consumption; - introduction of infrastructure for the development of electric transport 	<ul style="list-style-type: none"> - adaptation of the Transmission System for Gas capacity to the European level; - development of innovative technologies in the energy sector (including high-efficiency combined power and heat production); - Increase extraction volumes of gas from non-traditional sources, as well as gas extraction on the shelf; - Establishing clearly defined and transparent conditions for the coal sector; - reconstruction of combined heat and power plants to reduce emissions to 20%; - increase the share of renewable energy sources in the supply of primary energy to 25%; - establishment of standards for the construction of "eco-buildings"

* according to the data presented by (*Government portal and PwC group*)

Table 1 shows that Ukraine plans to develop alternative energy sources by only 8%, while this sector could become a decisive factor in the development of Ukraine as a gas exporter (projected reserves of gas only in explored deposits of Ukraine is 906.4 billion cubic meters, while the extraction is only 20 billion). After all, the replacement of at least 20% would significantly reduce the need for gas. At the same time, the Ukrainian government is also focusing its efforts on reducing gas consumption in all sectors (*Kulishov and oth., 2018*).

This decision is in some way similar to that one Japan made (mainly to the private households), when there is practically no gas supply even in winter periods, and the private households either use alternative energy sources or electrical appliances, of course, with partial assistance from the state. However, the development of such industries as "eco-building" and increasing the capacity of the alternative energy sector can be an ideal solution for the Ukrainian energy sector and for the common natural gas residential users.

Conclusions and suggestions

The article analyzes current price trends in the gas market of Ukraine and Europe. The research showed that the increase in gas prices to the market level could be effective only with the implementation of IMF's requirements for the reorganization of the Ukrainian gas market. This will help create a competitive gas market in Ukraine and reduce the current gas price. However, under these specific conditions, it is virtually impossible to cover the budget deficit, because of disproportions in current wage level. Private households will not be able to pay utility bills at such prices. Therefore, without new subsidized programs, the debts for consumed gas will continue to grow. In order to improve the gas industry Ukraine should focus on the development of alternative energy sources that would cover the needs of the private households in the energy sector, while the gas production has to be directed for the needs of Ukrainian industry and for export. The reserves of Ukraine's explored and unexplored gas fields will allow the development of exports in the future. The development of these fields will not bring benefits to domestic players at present, because gas prices are far from the market level. Instead, access to the international market can stimulate them. But this requires full completion of the reorganization of the Ukrainian gas market in line with the requirements of the IMF in the context of a new round of financial cooperation with Ukraine. Another possible solution in the future could be the creation of a gas hub on the territory of Ukraine, as reserves of gas storage facilities and reserves of fields have sufficient capacity. Stabilization of the Ukrainian gas market can make Ukraine a significant player in Europe.

The development of alternative energy sources is not a cheap pleasure. However, with providing these sources to the private households, it will be possible to cover the holes in the budget from existing utilities tariffs that the population can not cover itself. The access to these alternative energy sources should also be decentralized and not monopolistic. It is possible to locate separate bases for the production of alternative energy near the cities, as the territories in the suburbs are sufficient. Moreover, with the development of these sources it will be possible to sell excesses of such energy abroad, as the Netherlands does.

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