



Position Paper on Gas Market Design in Ukraine

Ensuring fair competition in the Ukrainian gas market and developing needed liquidity on the exchange

Energy Community
November 2020

Gas



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I. Introduction

Ukraine has achieved significant milestones in the last year and has made major steps towards gas market liberalization and the development of a stable hub. However, elements remain that hinder further development towards full liberalization and market competition and even threaten to reverse the achieved progress. This document is trying to sum up and analyze shortly recent important information and provide market concepts, which would be able to resolve identified gaps. The description of the situation of the Ukrainian gas market shall give an overview and put into perspective gas volumes which are traded at the moment in Ukraine and their shares.

The Energy Community Secretariat (EnCS) had advised the Ukrainian government already years ago when drafting a compliant PSO, and again during the negotiations on the PSO abolishment in 2020 to follow a different approach exactly to avoid a situation in the Ukrainian gas market of distorted competition and market monopolization. Several market participants are complaining and losing their client base. The core issue of market failure relates to the monopolistic access of NJSC Naftogaz of Ukraine to the major portion of the national gas production.

While the abolishment of the PSO for households was a major step towards market liberalization, NJSC Naftogaz of Ukraine has absorbed the “unlocked” nationally produced gas volumes without giving other market participants the chance to have access to the Ukrainian national gas production.

LLC GSC Naftogaz of Ukraine, a subsidiary of JSC NJSC Naftogaz of Ukraine, was determined to be the supplier of last resort. The winner's price offer consisted of UAH 2711.86 per thousand cubic meters with VAT and an own profit margin of 0%. In other words, the Supplier of Last Resort (SoLR) agreed to perform such functions without receiving any trade markup. Certainly, such an unprofitable price offer would not have been possible without the possibility of monopolistic access to the cheap resource of the gas production by the state.

Therefore, the EnCS is proposing market reforms which shall not only improve existing issues but shall also pave the way for future gas market development based on European best practices.

Our concept is proposing a design which would allow all market participants to have access to the resource of JSC Ukrgasvydobuvannya and moreover, that this gas should be traded on equal and transparent market segments which are operated by the Ukrainian Energy Exchange (UEEX). These volumes will also provide crucial liquidity on the gas market, which is needed to create a stable Ukrainian gas index. Due to the fact that the own production will be priced in, the Ukrainian gas price can potentially be lower than the TTF or NCG index price to which Ukraine is pegged at the moment.

Additionally, a concept is provided which could bring more transparency in the district heating (DH) segment and the District Heating Companies (DHCs) still covered by the PSO. In this sector, auctions in combination with clear separations between indebted and profitable DHCs could provide a first step towards market mechanisms.

II. Description of the situation of the Ukrainian gas market

According to Article 3 of the Law of Ukraine "On the natural gas market",¹ the natural gas market shall function in accordance with fair competition and principles, in particular, ensuring a high level of protection of rights and interests of natural gas consumers, including ensuring security of natural gas supplies as a top priority, in particular through:

- Diversification of natural gas supply sources;
- Free natural gas trade and equality of natural gas market players;
- Free choice of a natural gas supplier;
- Non-interference by the state in the functioning of the natural gas market, except for cases in which it is necessary to eliminate market drawbacks or to ensure other public interests, if such interference is carried out in a minimum sufficient way;
- Prevention and elimination of competition restrictions caused by the actions of natural gas market entities, including natural monopolies and state-owned business entities.

The situation on the natural gas retail market and the conditions under which final consumers receive natural gas, depends directly on the situation on the wholesale market (prices, offers and behavior of wholesale suppliers), since all natural gas entering Ukraine's retail market is formed by the offer of wholesale sellers (Ukrainian gas producers, importers, owners of gas in underground storages).

The share of imported natural gas is about 30%, while Ukraine itself produces 70% of its final gas consumption. From the volume of national gas production - more than 73% of gas is produced by subsidiaries of NJSC Naftogaz of Ukraine - JSC Ukrigasvydobuvannya and JSC Chernomornaftogaz.²

Ukraine has large storage capacities for natural gas in underground gas storage facilities (hereinafter - UGS), which contain a mix of differently priced natural gas. These volumes also affect the total commercial volume of the natural gas market. Ukraine does not export natural gas. According to the report on the results of the NEURC (hereinafter - the Regulator) for 2019,³ including data from the monitoring of the natural gas market in 2019,⁴ 19,75 billion m³ (commercial gas) was produced in Ukraine last year, while imports amounted to – 11,55 billion m³. The difference between the volumes of withdrawal and injected gas from/to UGS was (-) 5,16 billion m³.

According to information provided in the monitoring report of the natural gas market for the first half of 2020⁵, 9.62 billion m³ of commercial gas was produced. In total 4,53 billion m³ was imported with the difference between the volumes of withdrawal and injected gas from / to UGS amounting to (-) 1 billion m³. The total commercial volume of natural gas in 2019 amounted to – 26,14 billion m³ and for the first half of 2020 amounted to 13,15 billion m³.

¹ <https://zakon.rada.gov.ua/laws/show/329-19#Text>

² <https://www.naftogaz.com/www/3/nakweb.nsf/0/8b3289e9f4b2cf50c2257f7f0054ea23?OpenDocument&Expand=7&Click=>

³ http://www.nerc.gov.ua/data/filearch/Catalog3/Richnyi_zvit_NKREKP_2019.pdf

⁴ <http://www.nerc.gov.ua/?id=52780>

⁵ http://www.nerc.gov.ua/data/filearch/monitoryng/gas/2020/monitoryng_gaz_II-2020.pdf

Accordingly, in 2019: the market share of the Naftogaz Group in the market for wholesale gas supply (including imports) consisted of:

- 1) The production of JSC Chernomornaftogaz as percentage of the volume of gas production by other gas production enterprises was 0,14% (8,540 million m³), while JSC Ukrigasvydobuvannya produced 14 892,4 million m³ of gas (of which 13 620 million m³ was sold by JSC NJSC Naftogaz of Ukraine).
- 2) Wholesalers imported 11,55 billion m³, of which 5,47 billion m³ (47%) was imported by JSC NJSC Naftogaz of Ukraine, and 6,08 billion m³ (53%) was imported by other wholesalers.
- 3) Information on the volumes of injection / withdrawal of natural gas to / from UGS by economic entities is not publicly available, according to the information provided in the annual report of the Naftogaz Group for 2019,⁶ the total sales and supply of natural gas by Naftogaz Group amounted to 15,7 billion m³. It can be concluded that 3, 37 billion m³ of natural gas was injected into UGS (extracted and imported 19,07 billion m³ – sold 15,7 billion m³).

The estimated market share of Naftogaz Group in the wholesale and retail natural gas markets in 2019 was $(15,7 \text{ billion m}^3 / 26,14 \text{ billion m}^3) * 100 = 60\%$.⁷

Accordingly, in 2020: the market share of the Naftogaz Group consisted of:

- 1) 9,62 billion m³ of commercial natural gas was produced, of which 6,76 billion m³ (69 %) was commercial natural gas of JSC Ukrigasvydobuvannya.
- 2) 4,5 billion m³ was imported, of which 0,47 billion m³ (10%) was imported by JSC NJSC Naftogaz of Ukraine.
- 3) There is no information on the volumes of injection / withdrawal of natural gas to / from UGS in the first half of 2020 by economic entities publicly available, however, the difference between the volumes of withdrawal and injected gas from / to UGS in this period was -1 billion m³.

Thus, the estimated market share of the Naftogaz Group in the wholesale and retail markets of natural gas in the first half of 2020 is $((6,76 \text{ billion m}^3 + 0,47 \text{ billion m}^3) / 13,15 \text{ billion m}^3) * 100 = 55\%$. Assuming that the volumes in the UGS do not belong to JSC NJSC Naftogaz of Ukraine, the market share will be 47%.⁸

⁶ https://www.naftogaz.com/files/Zvity/Naftogaz_2019_EN.pdf (p. 60).

⁷ https://www.naftogaz.com/files/Zvity/Naftogaz_2019_EN.pdf (p. 60).

⁸ http://www.nerc.gov.ua/data/filearch/monitoryng/gas/2020/monitoryng_gaz_II-2020.pdf

1. Dominant market positions

According to the provisions of Article 12 of the Law of Ukraine "On Protection of Economic Competition", an economic entity occupies a monopoly (dominant) position in the market of goods, if this entity:

- Has no competitors;
- Does not experience significant competition due to:
 - limited access of other entities to purchase raw materials and sales of goods,
 - the presence of barriers to market access of other entities
 - the availability of benefits or other circumstances.

Monopolistic (dominant) is the position of an economic entity whose share in the market of goods exceeds 35%, unless it proves that it is subject to significant competition. Thus, JSC NJSC Naftogaz of Ukraine and its subsidiary JSC Ukrigasvydobuvannya in 2019 - 2020 occupied / occupy a monopoly (dominant) position in the wholesale and retail markets of natural gas due to the high market shares and privileged access to the national gas production.

Furthermore, paragraphs 10.3 and 10.4 of the Methodology for determining the monopoly (dominant) position of economic entities in the market, approved by the order of the Antimonopoly Committee of Ukraine dd 05.03.2002 № 49-r. (hereinafter - the Methodology) determined, in particular, that the signs of market power are, in particular, the ability of the business entity (entities), which is not the only (only) producer (supplier) of the product (product group), to:

- Dictate their conditions for the sale of goods (product group),
- Force the conclusion of a supply contract
- Impose unfavorable conditions on the consumer.

It is not prohibited to be in a dominant position on a specific market, but the undertaking concerned has a special responsibility not to allow its conduct to impair genuine undistorted competition.

2. Public Service Obligation

According to Article 11 of the Law of Ukraine "On the natural gas market", in order to ensure the availability of natural gas resources for vulnerable categories of consumers, the Government of Ukraine has decided to assign special responsibilities to subjects in the natural gas market. For this purpose, the Decree of the Cabinet of Ministers of Ukraine dd. 19.10.2018 № 867 "On Approval of the Regulations on the imposition of special duties on the subjects of the natural gas market to ensure public interests in the functioning of the natural gas market" (hereinafter – the PSO Regulation) was adopted. Under the PSO Regulation, JSC Ukrigasvydobuvannya and JSC Chornomornaftogaz until August 1, 2020, monthly sold natural gas of own production to JSC NJSC Naftogaz of Ukraine to form a resource of natural gas for domestic consumers, religious organizations and District Heating Companies (DHCs) to ensure the availability of natural gas resources. JSC NJSC Naftogaz of Ukraine, in turn, was obliged to sell natural gas to suppliers of natural gas to these categories of consumers.

In order to implement the conditions of the International Monetary Fund (IMF) on liberalization of the gas market and transition to market-based gas pricing, as well as in the process of reforming the natural gas market of Ukraine, natural gas prices for the above mentioned categories of consumers were brought in line with the market price level. Furthermore, gas supplies in accordance with the PSO provision were provided at market prices in accordance with a formula that took into account price quotations from European hubs (the formula is described in Figure 1). On August 1, 2020, the PSO Resolution expired as regards the obligations to provide natural gas resources for the population (until May 1, 2021, the Resolution will be in force as regards the DH supply).

The PSO Regulation was active from November 1, 2018 to May 1, 2020, in accordance with the resolution of the Cabinet of Ministers dd 24.04.2020 № 303 it was extended to 01.07.2020. Then, in accordance with the resolution of the Cabinet of Ministers dd 01.07.2020 № 542 Regulations on PSO № 867 was extended until 01.08.2020.

On August 1, 2020, the statutory obligation of JSC Ukrgasvydobuvannya and JSC Chornomornaftogaz to sell natural gas to JSC NJSC Naftogaz of Ukraine to form a natural gas resource for household consumers, religious organizations (except for the volumes used for their production) was abolished.

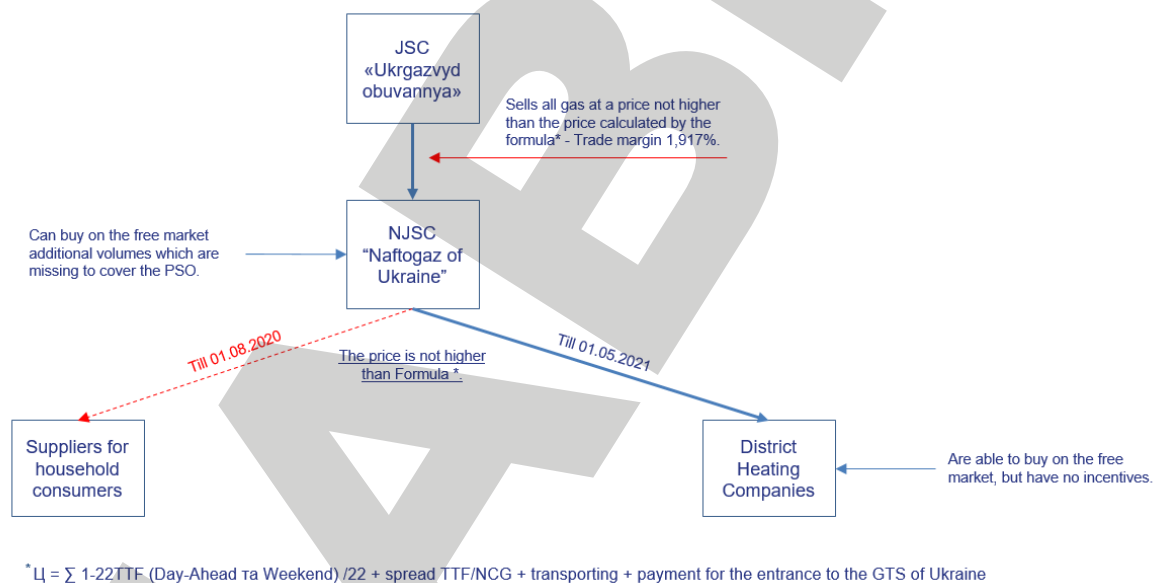


Figure. 1. Graphic illustration of PSO Regulation № 860.

According to the NEURC, natural gas is consumed unevenly throughout the year.⁹ To meet sustainable gas consumption needs, market participants use underground storage facilities, into which gas is injected during low demand and from which gas is extracted when demand increases (I and IV quarters of the year), as gas production rates remain stable throughout the year. Naftogaz produces 3,36 - 3,42 billion m³ of commercial gas quarterly. Thus, in the season of low gas demand until August 1, 2020, JSC Ukrgasvydobuvannya and JSC Chornomornaftogaz sell their extracted natural gas to JSC NJSC Naftogaz of Ukraine, which allowed the mother company to inject significant gas volumes into the UGS for the second quarter and the third quarter, which was to be used to supply gas to the population.

⁹ http://www.nerc.gov.ua/data/filearch/monitoryng/gas/2020/monitoryng_gaz_II-2020.pdf

According to the information from the report of NEURC in 2019, the volume of natural gas sales of JSC NJSC Naftogaz of Ukraine to natural gas suppliers for the needs of household consumers in 2019 amounted to about 7,95 billion m³, and for the needs of religious organizations to about 14,28 million m³. JSC NJSC Naftogaz of Ukraine supplied 4,62 billion m³ to DH suppliers for the production of thermal energy for the population, 2,09 million m³ to DH suppliers for religious organizations and 2,8 billion m³ to DH suppliers for the production of thermal energy and electricity.¹⁰ As a result of the abolition of the PSO, JSC Ukrigasvydobuvannya potentially has 6,21 billion m³ of natural gas per year at its disposal, which can be sold on the free market. Thus, starting from August 1, 2020, Ukraine should have had a natural gas market that provides an opportunity for domestic consumers to choose any natural gas supplier on competitive terms and based on best price offers.

3. Total absorption of the domestic gas production

After the PSO resolution regarding gas supplies to the population and religious organizations has expired, JSC Ukrigasvydobuvannya and JSC Chornomornaftogaz continued to supply gas exclusively to their parent company JSC NJSC Naftogaz of Ukraine without providing natural gas to the free market.¹¹ Natural gas suppliers can still not directly (without intermediaries) purchase natural gas from JSC Ukrigasvydobuvannya. Natural gas suppliers repeatedly asked JSC Ukrigasvydobuvannya to consider concluding contracts for the sale and purchase of natural gas, however, they did not receive a positive response.

JSC NJSC Naftogaz of Ukraine, in addition to the status of importer, wholesaler and owner of state gas producers, is currently also a licensed supplier of natural gas, which is a competitor to other independent suppliers in the retail market. JSC NJSC Naftogaz of Ukraine, has de facto exclusive access to the state gas resource and is at the same time a supplier of natural gas, including end consumers. We understood from market participants that JSC NJSC Naftogaz of Ukraine buys and sells state-produced natural gas at significantly lower prices than those existing in the competitive natural gas market of Ukraine which may amount to an infringement of competition law in the form of a so-called margin-squeeze.

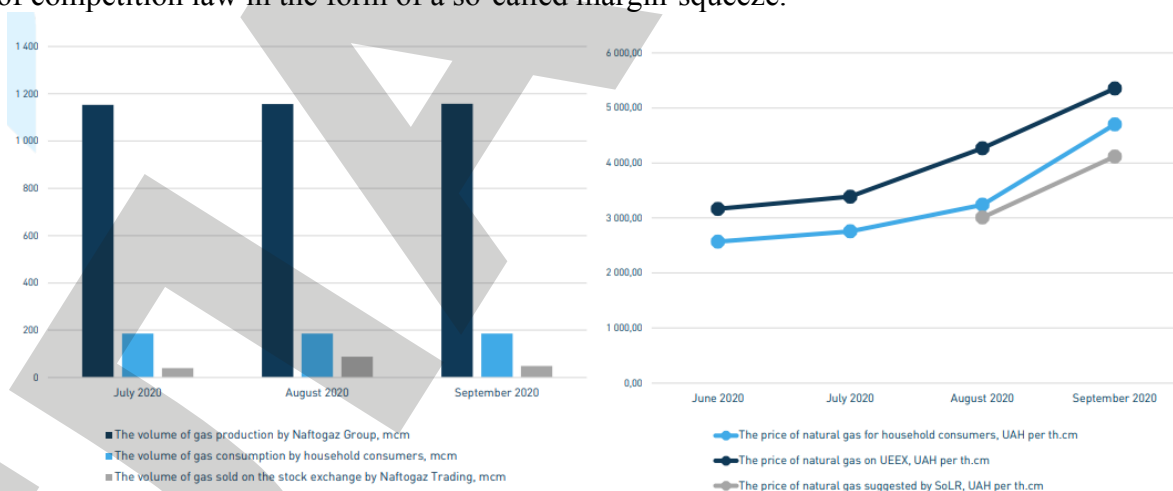


Figure 2. Prices and volumes of gas sales by Naftogaz Group¹²

¹⁰ http://www.nerc.gov.ua/data/filearch/Catalog3/Richnyi_zvit_NKREKP_2019.pdf (Page 152-153)

¹¹ <http://www.naftogaz.com/www/3/nakweb.nsf/0/C67293F1FE9A3530C2257EEC00385E7A?OpenDocument>

¹² Source: Energy Suppliers Association

LLC GSC Naftogaz Trading (subsidiary company of JSC NJSC Naftogaz of Ukraine) sells gas to industrial consumers through the Ukrainian Energy Exchange (UEEX), and also offers to sell natural gas to natural gas suppliers for the needs of the population (household consumers).¹³ According to official information, the prices at which companies of Naftogaz sells gas on UEEX are much higher than those at which the company offers gas to its direct consumers and some traders, which does not encourage buyers to trade on the exchange. There are concerns that discrimination and pricing abuse took place for two months,¹⁴ which started to increase after the Secretariat of the Energy Community became interested in this issue.¹⁵

4. Supplier of last resort

LLC GSC Naftogaz of Ukraine sells gas to household consumers as both a regular supplier and a Supplier of Last Resort (SoLR), as well as to small and medium business.¹⁶

On July 10, 2020, in accordance with the updated procedure for the tender to determine the Supplier of Last Resort, the Resolution of the Cabinet of Ministers of Ukraine dated December 12, 2018 № 1056 was approved.¹⁷ The SoLR was awarded to LLC GSC Naftogaz of Ukraine, a subsidiary of JSC NJSC Naftogaz of Ukraine. The winner's price offer made up - UAH 2711.86 per thousand cubic meters with VAT and its own markup - 0%. In other words, the SoLR agreed to perform such functions without receiving any trade markup. Certainly, such an unprofitable price offer would not have been possible without the possibility of monopolistic access to the cheap resource of the gas production by the state.

Article 15 of the Gas Market Law stipulates that the price of natural gas supplied by SoLR shall not limit competition on the natural gas market and shall be established based on the rules for determining the price of natural gas supplied by the SoLR, which are approved by the Regulator. So far, the regulator (the National Commission, which carries out state regulation in the energy and utilities sectors) has not defined the rules for determining the price of natural gas supplied by the SoLR, and the formula for determining the price was fixed only in the procedure for conducting a tender to determine the supplier of "last resort". The gas price from the SoLR remains much lower than market prices, which on the contrary should be more expensive. This allows Naftogaz to attract customers using low prices from SoLR and incentivizes customers to fall under SoLR.

These circumstances are likely to exacerbate the high degree of concentration of the natural gas market by JSC NJSC Naftogaz of Ukraine and provide the company with an unconditional competitive advantage over other market participants. The consequence of this is non-competitive pricing of gas, which threatens the development of wholesale and retail markets of natural gas on free competitive terms inevitably and adversely affects both the final consumers of natural gas and the competitiveness of natural gas compared to other energy sources.

¹³ <https://naftogaztrading.com.ua/news/for-clients>

¹⁴ https://expro.com.ua/spectema?fbclid=iwar3btgn-nawdgrmaspjojqlv8rddybpplkn6jcmt3r6j0ypti_kid6xx76i

¹⁵ <https://www.energycommunity.org/legal/cases/2020/case1720UE.html?fbclid=IwAR2O2r8CTXM8QiyttlNsePrjxm7coqrZYbpJ5QMAcZ95VmdyAfwZAScwUL8>

¹⁶ <https://gas.ua/uk/home>; <https://gas.ua/uk/home/news/postachalnik-ostannoyi-nadiyi-pon;>
<https://gas.ua/uk/business>

¹⁷ <https://zakon.rada.gov.ua/laws/show/1056-2018-%D0%BF#Text>

5. Stimulation of market liquidity through gas release programs

The Government of Ukraine has not yet taken any steps to incentivize liquidity provision on the gas exchange, as has been the case in many European countries. Government programs committing to sales of natural gas are a common tool. Previously, they were introduced for the following purposes:

- as a tool to open wholesale gas markets for competition (for example, as was the case in the UK, Spain, Italy);
- as measures during antitrust proceedings (e.g. France, Germany, Austria)

Gas Release Programs have generally been implemented targeting relatively low quantities compared to national consumptions and were implemented for limited periods of time (~ 4-6 years), especially triggered by mergers between main players on the market, with the aim of avoiding the creation of dominance on the markets concerned. For example, the following countries were the last in the EU to have mandatory centralized gas sales:

- Romania - 30% obligation quota for producers in 2018 to trade natural gas on a centralized exchange platform;
- Poland - 55% of the natural gas has to be traded on the centralized exchange;
- Greece - 17% of the main importer's annual total quantity has to be auctioned through the system of electronic auctions.

Poland and Greece rely heavily on imports and the natural gas trading obligations on centralized markets. Different forms of open auctions are meant to protect against a dominant position of the main gas importer. With its 30% obligation, Romania is somewhat atypical amongst gas producers in Europe. Such obligations were introduced in order to increase the dynamic of the gas wholesale market.

III. Description of the mechanism for resolving the situation, which was proposed by the Energy Community Secretariat

Over the last years the EnCS and the Ukrainian government have had intense negotiations and discussions regarding the structure and the future of the PSO. In the course of these discussions, the EnCS proposed to the Government of Ukraine to adopt the following changes to the PSO in terms of abolishing obligations and to provide natural gas to the population, but following the main subject to provide free access to public gas resources to all buyers.

It was proposed to provide such access by obliging JSC Ukrigasvydobuvannya and JSC Chornomornaftogaz to sell gas on competitive exchange trades. Thus, it was proposed to ensure absolute transparency of state gas production sales in three segments of the exchange market.

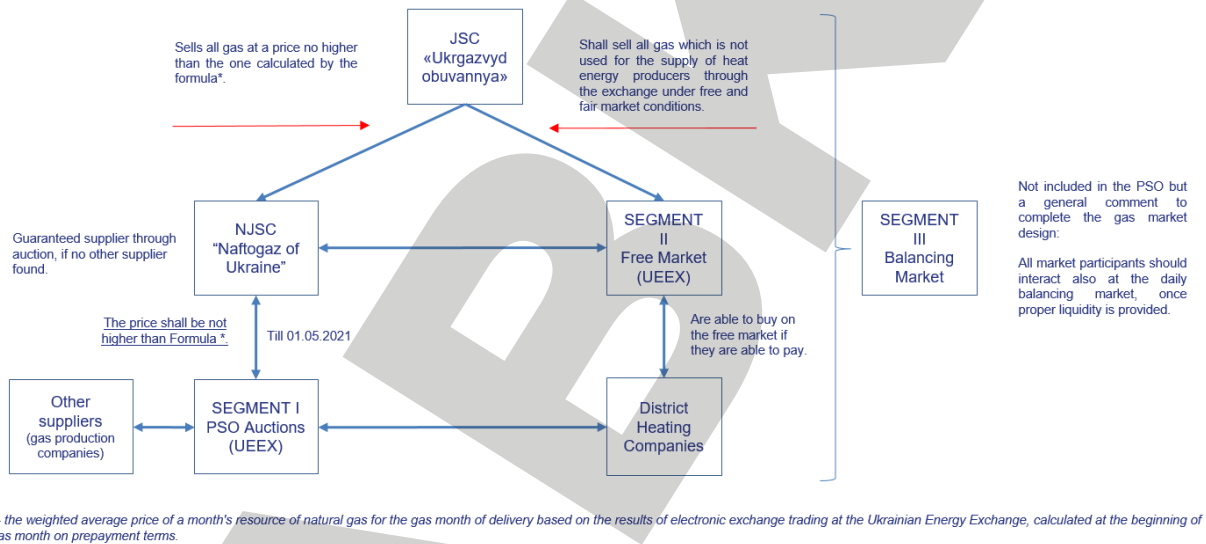


Fig. 3. Scheme for the selling of the gas resource of JSC Ukrigasvydobuvannya on competitive and market based terms, proposed by the Energy Community Secretariat in May 2020

1. SEGMENT I – Specialized PSO auctions for DHCs

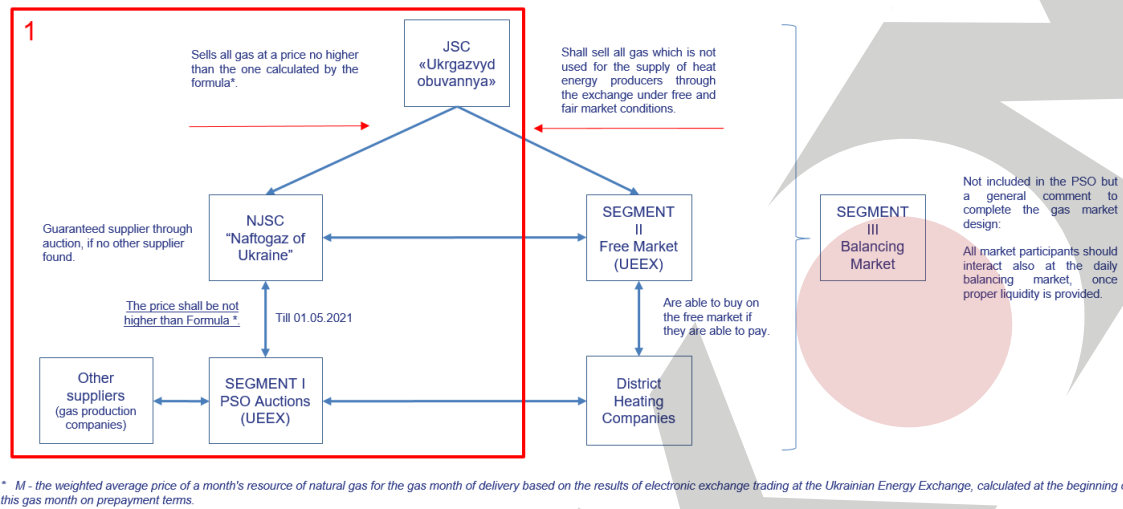
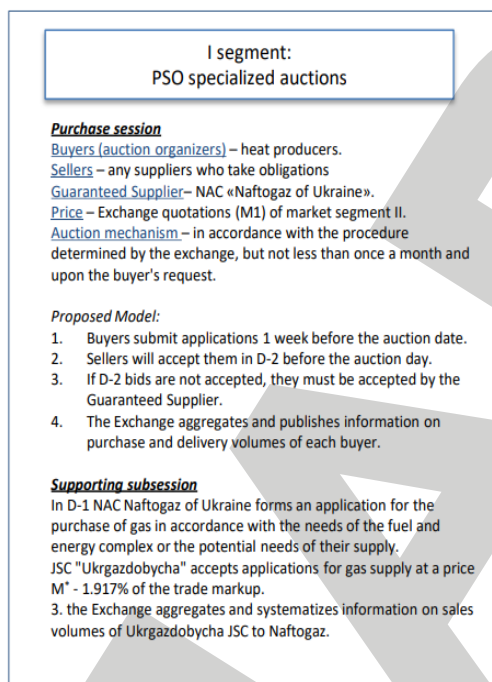


Fig. 4. Proposed scheme of control for the implementation of JSC Ukrgasvydobuvannya's gas resource for DHCs



PSO specialized Auctions:

- A similar mechanism is used in the electricity market of Ukraine to ensure availability of electricity for domestic consumers¹⁸ - electricity producers, which are entrusted with respective responsibilities (SE NNEGS Energoatom and PJSC Ukrhydroenergo) sell electricity to SE Guaranteed buyer at regulated prices and within the limits of reasonable demand of population.¹⁹

- UEEX holds auctions on sale of lot packages, which were requested by the Government of Ukraine to provide affordable electricity to "large energy-intensive enterprises" of SE NNEGS Energoatom. Other sellers who undertakes appropriate responsibilities can also be participants in such auctions.²⁰

- UEEX also holds auctions for sale of crude oil, gas condensate of own production and liquefied gas (sellers of JSC Ukrgasvydobuvannya and PJSC Ukrnafta) in accordance with CMU Resolution No. 570²¹ and for Article 4¹ of the Law of Ukraine «On oil and gas».²²

It is assumed that the auction will be divided into two periods:

- 1) DHCs announce a purchase auction in which any gas producing companies may take part. At the same time, the selling price should not be higher than it was in the free segment of UEEX (the forward contracts market)
- 2) If the DHCs orders were not satisfied, or satisfied not in full, then a collateral session shall be held in which the JSC Ukrgasvydobuvannya acts as a guaranteed supplier and must accept all DHCs orders at a price not higher than M1 - trade markup.

¹⁸ <https://zakon.rada.gov.ua/laws/show/483-2019-%D0%BF>

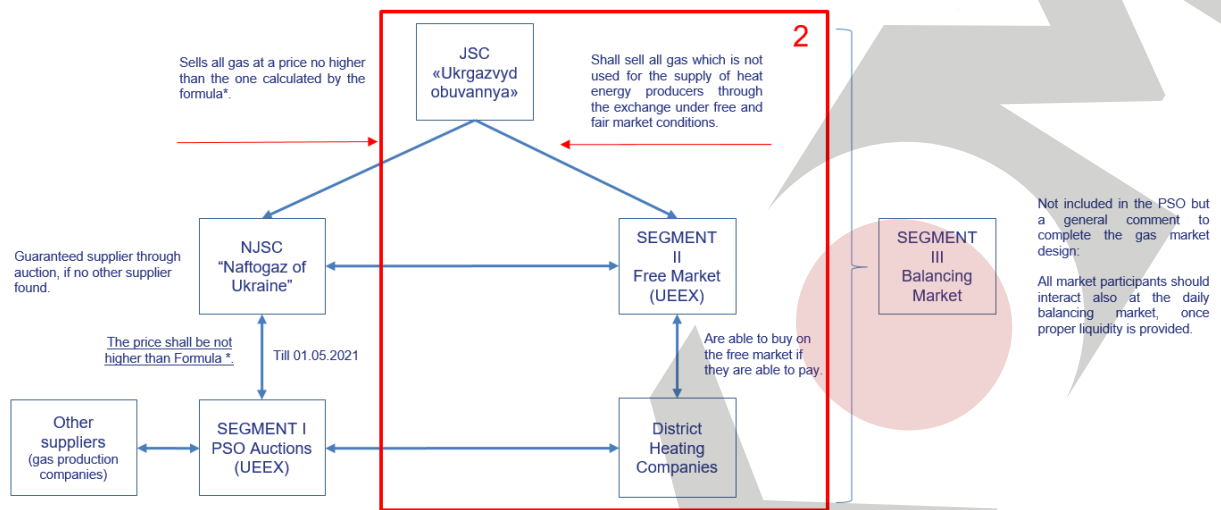
¹⁹ <https://zakon.rada.gov.ua/laws/main/499-2019-%D0%BF>

²⁰ <https://zakon.rada.gov.ua/laws/show/436-2020-%D0%BF#n17>

²¹ <https://zakon.rada.gov.ua/laws/show/570-2014-%D0%BF#Text>

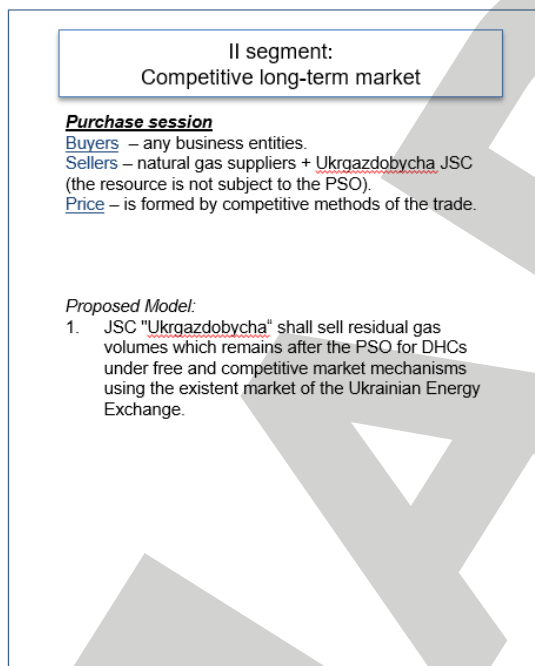
²² <https://zakon.rada.gov.ua/laws/show/2665-14#Text>

2. SEGMENT II - Gas release program using the OTC market of UEEEX



* M - the weighted average price of a month's resource of natural gas for the gas month of delivery based on the results of electronic exchange trading at the Ukrainian Energy Exchange, calculated at the beginning of this gas month on prepayment terms.

Fig. 5. Proposed scheme of sales of JSC UkrGasvydobuvannya gas resource free from PSO in the medium- and long-term market



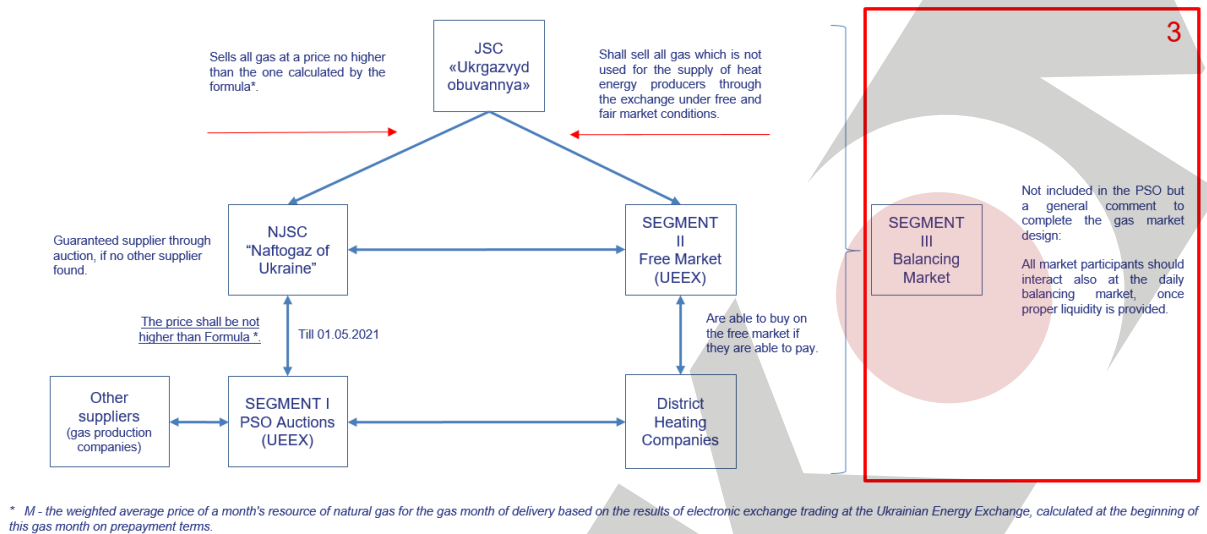
The forward natural gas market successfully operates on UEEEX (long- and medium-term market of bilateral contracts) (number of participants 345, sales volume for the 3rd quarter of 2020 - 1.8 billion c. m.). This market has become a price indicator for gas in Ukraine, but it requires further increase in liquidity, which can be achieved through right government decisions.

It is assumed that JSC UkrGasvydobuvannya on equal terms with other participants will be able to sell gas of its own production (which are not under the PSO for DHCs), which will provide equal access to the national gas resource for all market participants, including NJSC Naftogaz and other gas supplying companies that found themselves in non-competitive conditions because of dumping actions of NJSC Naftogaz.

The prices will be formed by competitive market methods based on trade results.

JSC UkrGasvydobuvannya could provide 6,21 bcm (as indicated on page 5) per year to be traded in a transparent manner with equal access rights for all market participants which are competing in the supply segment. These volumes would allow to create an indexation which is as stable as TTF or NCG, but it would allow to distinguish the real Ukrainian gas market price. The benefits could be spread to all Ukrainian customers. There is no reason why Ukraine, while having own gas production, should be pegged to TTF or NCG. The index will be representative enough, even if only a portion of these volumes would be on Segment II.

3. SEGMENT III: Spot market – Volumes provided by Ukrigasvydobuvannya would immediately create strongly need liquidity



* M - the weighted average price of a month's resource of natural gas for the gas month of delivery based on the results of electronic exchange trading at the Ukrainian Energy Exchange, calculated at the beginning of this gas month on prepayment terms.

Fig. 6. Proposed scheme of sales of JSC Ukrigasvydobuvannya gas resource free from PSO on short-term market

**III segment – non PSO related:
Daily Balancing Market**

Trade session through bilateral auction mode
Sellers and Buyers– any participants in the natural gas market shall buy or sell a natural gas resource as a short-term standardized product for their balancing purposes.
Price - is formed by competitive methods in the form of bilateral continuous auction.

Proposed Model:

1. Free competitive bidding for all market participants.
2. Price formation based on the results of matching - automatic conclusion of exchange transactions based on bids submitted by trading participants on the trading platform.
3. The Exchange aggregates the information and publishes the results of exchange trades on its website.

A Memorandum of Understanding (MoU) was signed between UEEEX, EnCS, EBRD and Ministry of Energy of Ukraine on support of the development of gas exchange trading in Ukraine. According to the MoU, an Advisory Board to UEEEX was established, which included representatives of the Memorandum's signatories.

A second signed Memorandum was structured and is aimed at developing the short-term gas market. It was signed by the EnCS, Operator GTS of Ukraine, NEURC and UEEEX. The main role in this Memorandum is assigned to the GTS Operator of Ukraine, which through its efforts and participation should contribute to the development of the short-term gas market in Ukraine. However, this is not enough to establish the necessary level of liquidity of the short-term market. Now UEEEX has launched the Within-day market, which is used by participants to balance their portfolios and in the near future the Day-ahead market will be launched.

JSC Ukrigasvydobuvannya should have free access to the short-term market of UEEEX and can act as a powerful market maker for this market, which will form stable price signals in Ukraine, support the formation of real market margin prices (solving problems with balancing), and finally will help with its liquidity to strengthen the integration process with European gas markets and create a well-functioning gas hub in Ukraine.

IV. Measures that can be applied

1. General steps:

1) Gas Release Program – National Gas Production:

- a. JSC Ukrgasvydobuvannya could provide up to 6,21 bcm (as indicated on page 5) per year to be traded in a transparent manner with equal access rights for all market participants which are competing in the supply segment. These volumes would allow to create an indexation which is as stable as TTF or NCG, and it would allow to form and reveal the real Ukrainian gas market price. The benefits could be spread to all Ukrainian customers. There is no reason why Ukraine, while having own gas production, should be pegged to TTF or NCG. The index will be representative enough, even if only a portion of these volumes would be traded on Segment II.
- b. JSC Ukrgasvydobuvannya should have free access to the short-term market of UEEEX and can act as a powerful market maker for this market, which will form stable price signals in Ukraine, support the formation of real market margin prices (solving problems with balancing), and finally will help with its liquidity to strengthen the integration process with European gas markets and create a well-functioning gas hub in Ukraine.

2) Introducing new elements for Naftogaz in the supply segment of DHCs

- a. amendments or cancellation of PSO
- b. introducing described auctions

2. Detailed proposal for the segment of DHCs:

- 1) Carry out a careful segmentation of debtors, highlighting the problems that caused the debt. If it is caused by the Regulator's policy on tariffs, it may be a question of compensation by the state;
- 2) Debts in the part of the difference in accrual of fines and penalties can be written off by Naftogaz;
- 3) Debts caused by non-payment of the population can be separated into a separate category of DHCs. At the same time, the state must clearly distinguish between the truly insolvent parts of the population and protect them with subsidies or a PSO, while for the solvent part of the population severe sanctions in case of poor payment discipline should be applied.