

UKRAINIAN ENERGY EXCHANGE

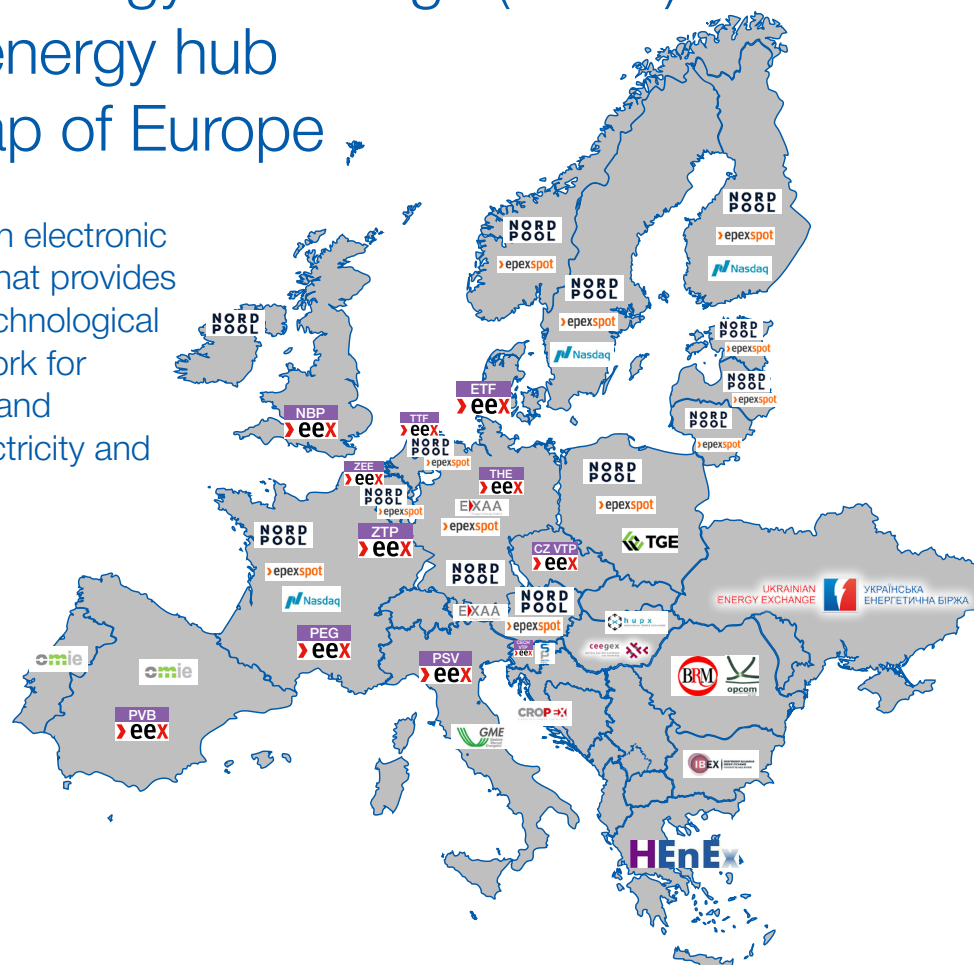
ANNUAL REPORT 2021

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Ukrainian Energy Exchange (UEEX)

is a new energy hub on the map of Europe

UEEX – is an open electronic trading platform that provides organizational, technological and legal framework for the development and functioning of electricity and energy markets.



WE CREATE A MARKET

WE REPRESENT THE MARKET

11 years of activity

11 market segments

For the last 5 years:

400+

billion UAH
trading volume

65+

thousand
concluded agreements

5000+

participating
companies

UEEX is a leader in exchange trading in Ukraine and the only centralized platform where the greatest liquidity and trade in all types of energy resources are concentrated. UEEX is a member of the **Europex** - Association of European Energy Exchanges.

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Oleksii Dubovskyi

Chairman of the Exchange Committee
of Ukrainian Energy Exchange LLC

Transparency, openness and mobility – these are the advantages of modern exchange trading which allows you to see the whole market situation, save time and reduce costs when buying or sale of goods.

In 2021, we continued to improve the main directions and seek and discover new ones. This allowed to attract even more new participants to trading on the exchange, and they, in turn, had the opportunity to use modern, convenient trading mechanisms.

The goal of UEEX – to create a competitive exchange market in Ukraine. Going to this goal, we use not only our many years of experience, but also attract foreign and Ukrainian partners. In 2021, the Ukrainian Energy Exchange and the Storage Operator opened the possibility of trading in uncleared gas in UGS. UEEX has become a reliable tool for the state to build competitive markets and implement public policy.

In 2022, we will continue to implement and apply the latest European practices that are needed in today's energy market. The development of exchange trade will reduce the dependence of Ukrainian companies and end consumers on world prices, which in turn are quite volatile.

I express my sincere respect and gratitude to market participants, partners for their cooperation and trust, and to my team for their professionalism. We remain open to working together, developing new projects and implementing them. For more than 11 years, we have been successfully developing and improving exchange trade in the Ukrainian energy market, and thus contributing to the economic and European development of Ukraine.

Inna Shcherbyna

Deputy Chairman of the Exchange Committee
of Ukrainian Energy Exchange LLC

The UEEX team is well aware of the goal we are moving towards and has a clear vision of the market we are building. UEEX is decisively approaching the target exchange model of the developed European world. Our country has a powerful capacity, but only the coordinated work of all stakeholders and a deep understanding of the market can implement it and launch effective transformation processes. UEEX invests in the intellectual capital of its team so that UEEX can invest in the future of its Ukraine. An efficient market with efficient players, stable, unified, competitive and transparent rules are all the basis of a sustainable economy. We are pleased to present the achievements of the 2021 exchange. We are grateful to our partners for their contribution to the development of exchange trade and marketability.

UEEX works on the principle of strict compliance with applicable law, transparency and accessibility to bidding for each participant. Our goal is to implement energy reforms in Ukraine in the most effective way and thus contribute to Ukraine's European future.



Oleksandr Kovalenko

CEO of Ukrainian Energy Exchange LLC

According to the results of 2021, the exchange trade in energy resources on the UEEX showed an increase in sales in both physical and value terms. A significant share in the overall sales structure is occupied by electricity. Last year, UEEX developed a bilateral auction system with standard contracts with a delivery period of one week, one month, one quarter, etc. in accordance with European practice. Market participants, representatives of the Ministry of Energy and the NEURC are involved in the formation of the mechanism of such tenders. UEEX is preparing for the full launch of the bilateral auction system after testing and taking into account the comments of market participants. In addition to the growth of sales in the main areas, there is a significant increase in sales of untreated timber.

There are more and more participants in this market segment. UEEX has developed a new trading system for auctions for the sale of untreated timber.

As we can see, the Ukrainian Energy Exchange implements modern technologies, masters new directions, develops and implements promising projects.

GENERAL CHARACTERISTICS OF UEEX ACTIVITIES

UKRAINIAN
ENERGY EXCHANGE



УКРАЇНСЬКА
ЕНЕРГЕТИЧНА БІРЖА

- the first commodity exchange licensed by NSSMC in Ukraine
 - ✓ license for activities on the organization of trade in products on commodity exchanges
 - ✓ license for clearing activities to determine liabilities
- operates the electricity market in the segment of bilateral contracts
- operator of the trading platform on the within-day gas market and the day-ahead market
- organizes exchange trade in all types of energy resources
- the main source of market prices for energy in Ukraine

Electricity BCM

75%

from the free market

Gas

15%

from the free market

LPG

35%

from production

Oil products

15%

from production

Oil and
gas condensate

71%

from production

Untreated timber
and lumber

65%

from production from July 2021

Coal

Fertilizers

Raw materials
and other products

Tax pledge

Prozorro.Sale

Bidding results in 2021

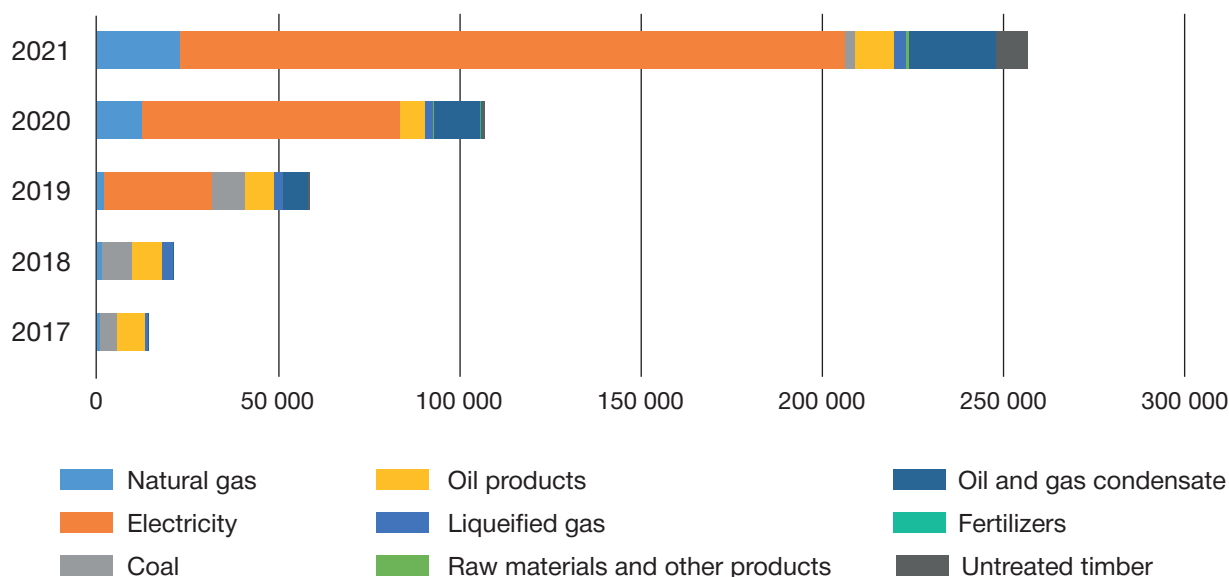
During 2021, the total number of UEEX participants quadrupled, increasing by more than 5,000 companies, and the cost of sold energy resources doubled, exceeding UAH 250 billion. In particular, electricity sales increased by 12%, reaching 109 million MWh, sales of petroleum products and liquefied gas increased by 10%, exceeding 550 thousand tons., sales of wood increased 4 times, reaching 3 million cubic meters. In 2021, UEEX has improved its trade functionality and expanded its market presence in several areas, such as the short-term natural gas market and the untreated timber market.

Indicators	2019	2020	% growth	2021	% growth
Number of trading sessions*	759	1024	↑ 34,91	2270	↑ 121,68
Number of participants	1040	1220	↑ 17,31	5374	↑ 340,49
Sales of energy resources, UAH billion	58,96	105,92	↑ 79,65	256,41	↑ 142,08

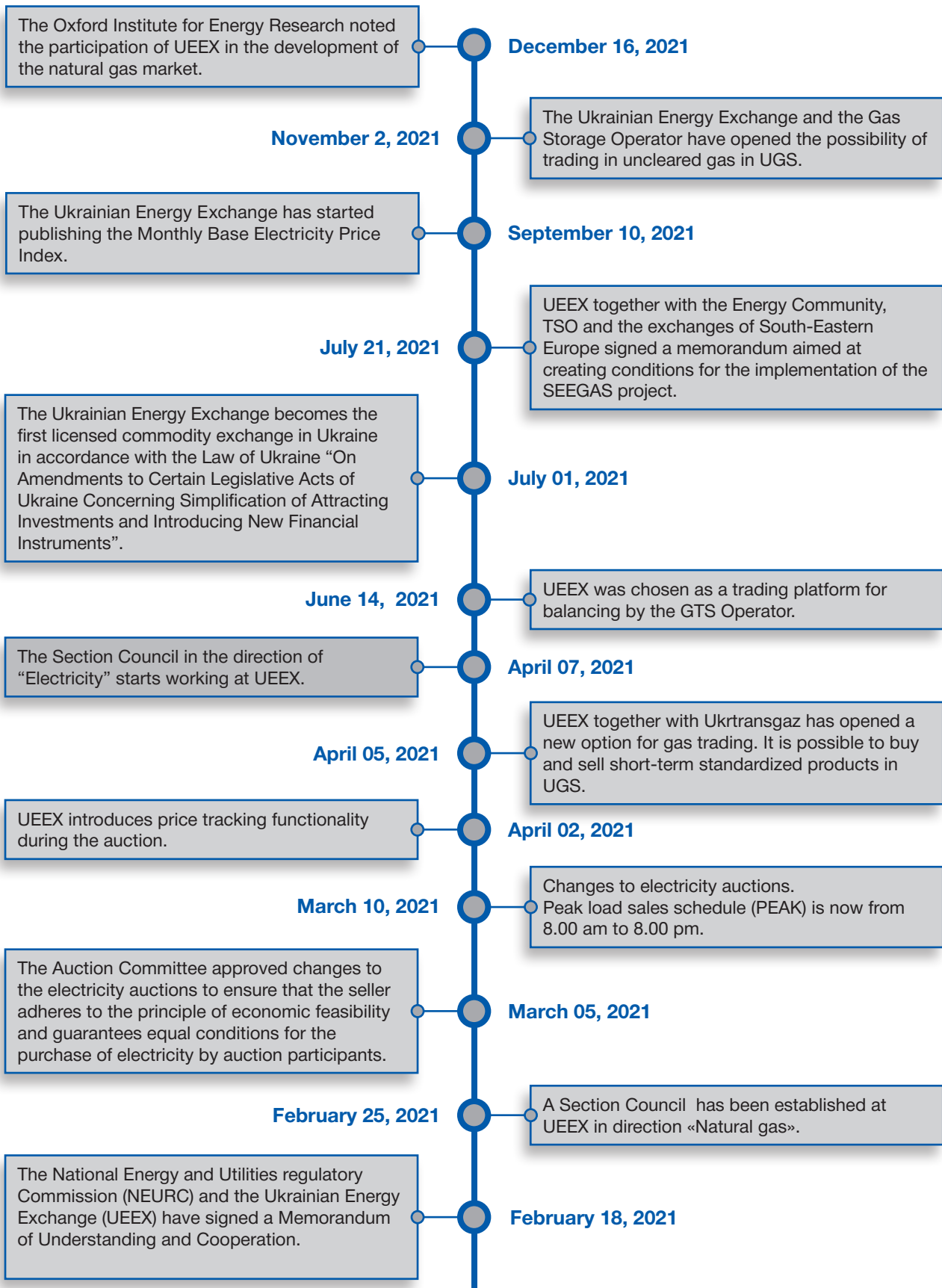
* in the form of a unilateral auction

Ukraine has implemented legislation in accordance with EU standards governing the activities of commodity exchanges. According to the Law of Ukraine 738-IX of 19.06.2020 «On Amendments to Certain Legislative Acts of Ukraine on Facilitation of Investment Attraction and Introduction of New Financial Instruments», the activity of commodity exchanges is subject to licensing and regulated on the basis and within the powers defined by the Law «On state regulation of capital markets and organized commodity markets».

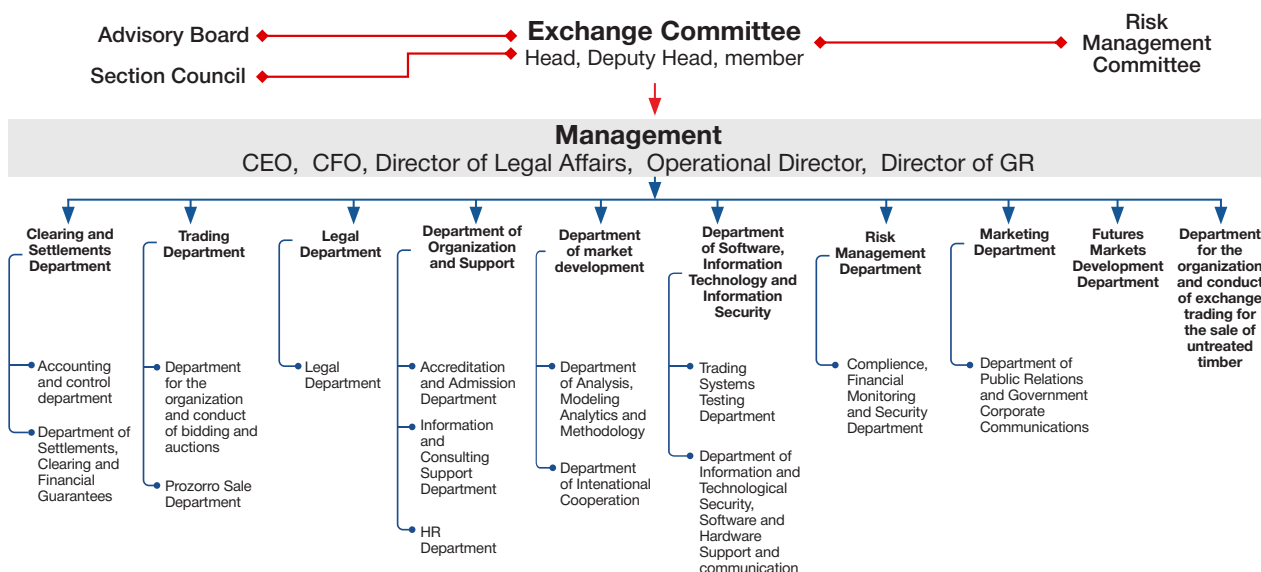
Volumes of bids by directions, UAH million



Key events in 2021



Organizational structure of UEEEX



The supreme governing authority of UEEEX is the General Meeting. The Exchange Committee manages the exchange in the period between the General Meeting. The Executive Directorate carries out operational management. Such an organizational structure places high demands on the management team, so UEEEX pays considerable attention to the professional development of employees, promotes the acquisition of new knowledge and experience.

The Advisory Board is a collegial authority of the Exchange, the purpose of which is to develop a strategy, provide proposals and advice on improving the efficiency of the Exchange and development in accordance with European standards, promoting international cooperation to ensure transparency and competition in the Ukrainian market - gaining benefits for Ukrainian consumers.

In 2021, the Section Council was established in the areas of cooperation with the exchange on the organization and development of exchange trade and other exchange services, promoting the consideration of public opinion of the Section Council in the formation and implementation of state energy policy in the field of exchange trade, clearing and settlement activities, etc., preparation of joint activities and discussions on topical issues of energy sector development.

Advisory Board of UEEEX



Gregor Weinzettel
Gas Market Expert,
Energy Community Secretariat



Dr. Egbert Laege
Senior Advisor on European
Energy Markets



Giuseppe Grimaldi
Associate Director -
Senior Economist at EBRD

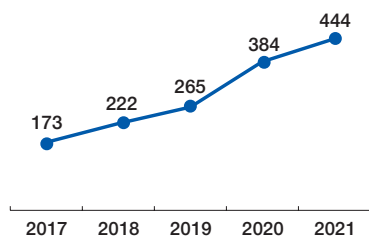


Nemchynov Maksym
Deputy Minister
of Energy of Ukraine

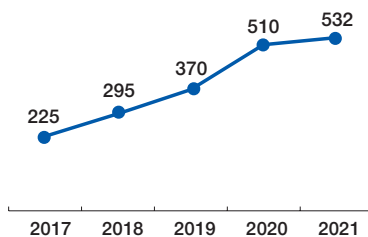


UEEX exchange market participants

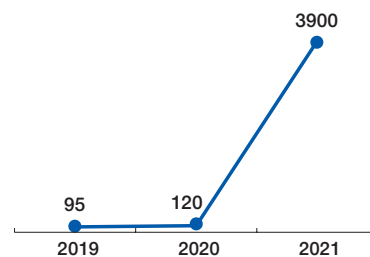
Oil products



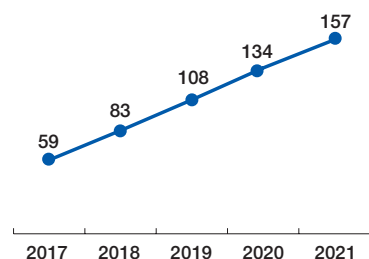
Liquefied gas



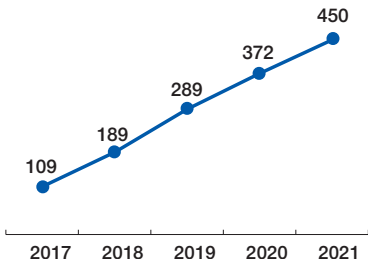
Untreated timber



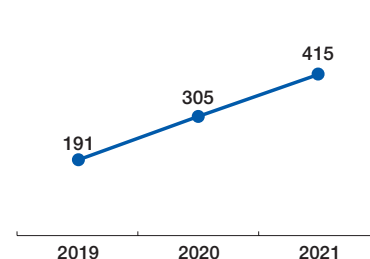
Oil and gas condensate



Natural gas



Electricity



Among the participants of trades and auctions are the following companies:



Укргідроенерго

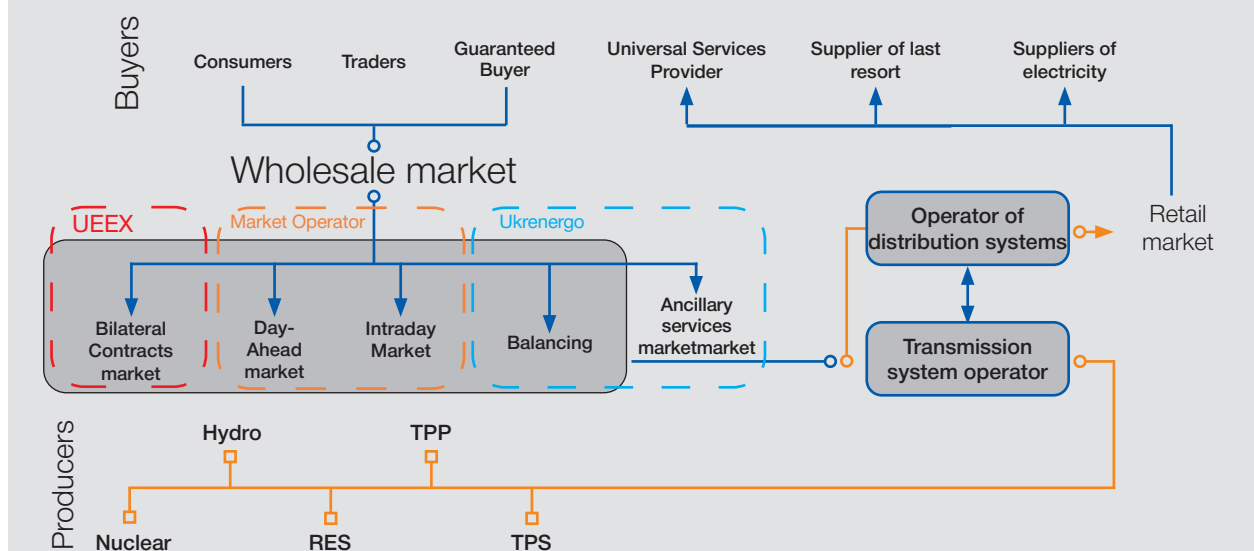


ELECTRIC POWER

2021 was a landmark year for electricity markets around the world. Demand for electricity increased by more than 6% compared to last year and will continue to grow in the future, according to experts.

in 2021 in the IPS of Ukraine trade zone amounted to 142 million MWh, most of them were generated by nuclear and thermal power plants (86 and 39 million MWh, respectively). In the «BEL» trade zone

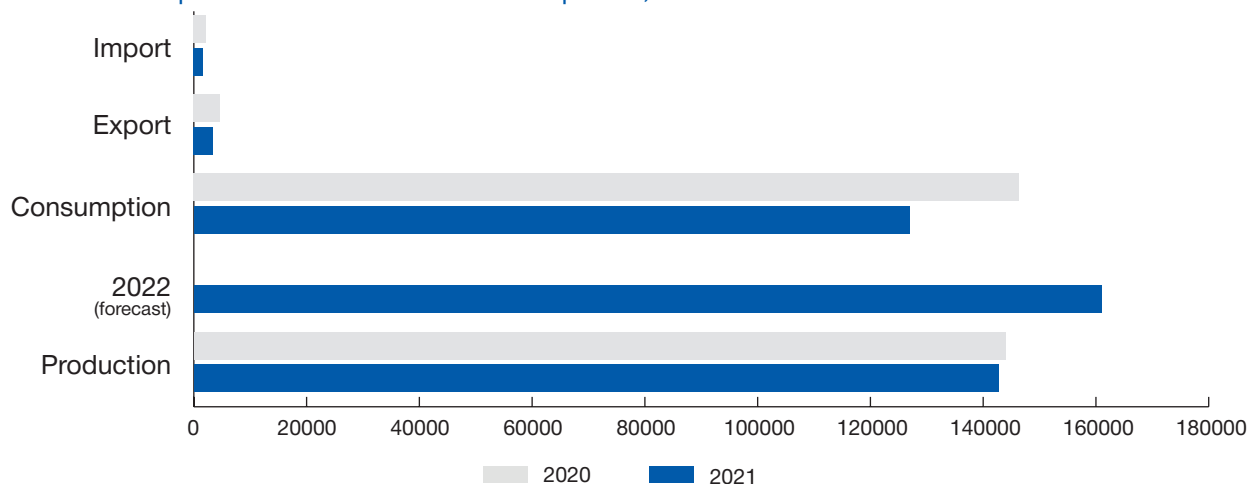
Structure of electricity market



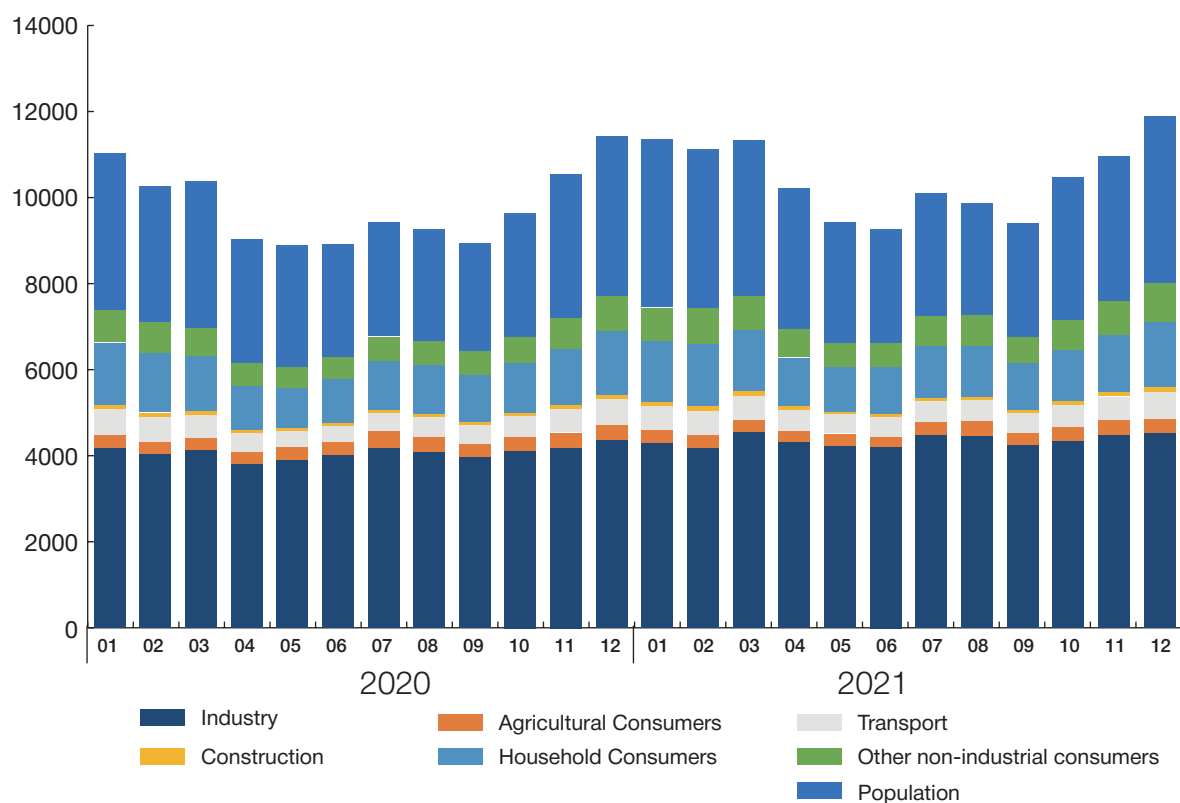
The efficient functioning of the electricity market as a component of the energy system is important for the economy as a whole. Electricity production

production amounted to 7.42 million MWh, most of which was generated by thermal generation - 7.39 million MWh.

Balance of production and consumption, thousand MWh.



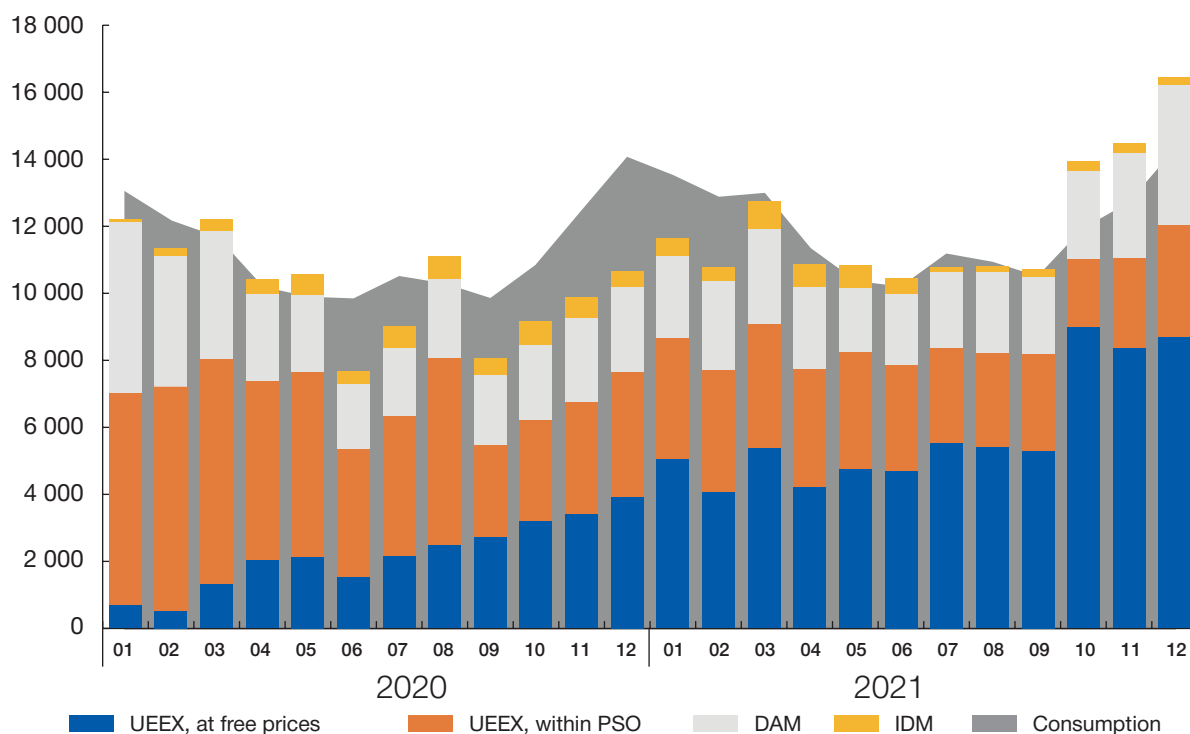
Structure of consumption in Ukraine, thousand MWh



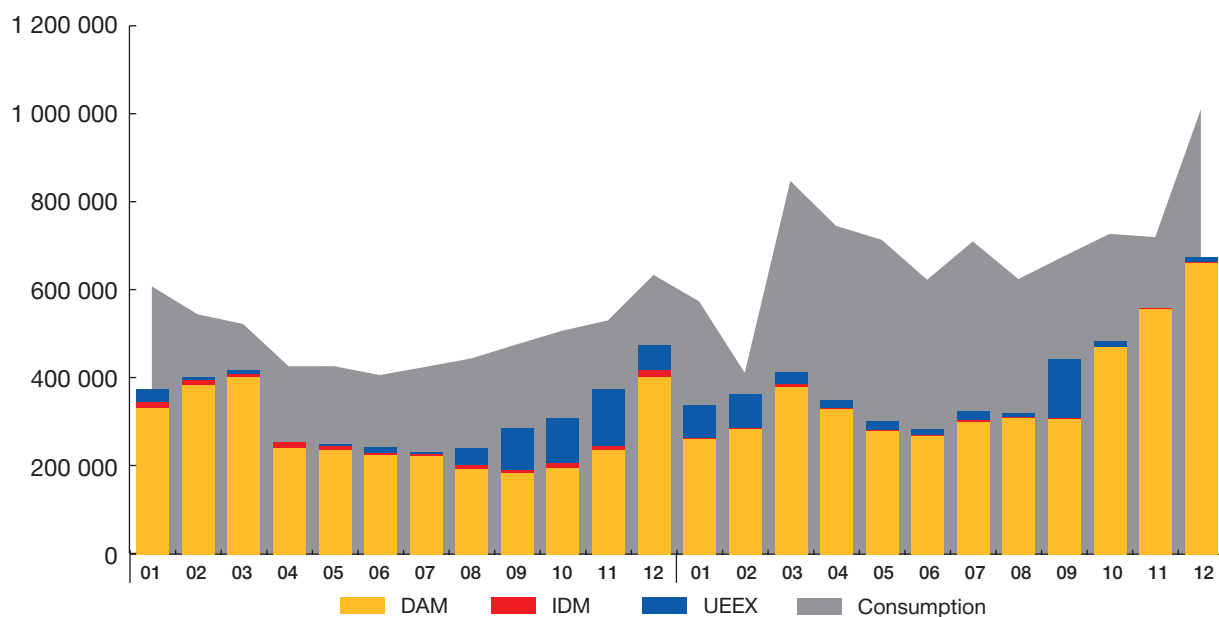
Sales volumes of electricity on UEEX by supply periods in comparison with SE "Market Operator" (DAM, IDM) by trade zones of "IPS of Ukraine" and «BEI» is shown in the graphs below. The share of sales at BCM increased relative to the level of electricity sold in short-

term markets. It should be noted that in Ukraine in 2021, according to the NEURC, 12% of the total sales on the electricity market were sold at DAM, 3% at the intraday market, and 85% under bilateral contracts.

Sales of electricity in the IPS of Ukraine trade zone, thousand MWh



Sales of electricity in Burshtyn Island trade zone, MWh.



Price caps

In order to curb the sharp rise in electricity prices of the NEURC, the following price caps have been set for IDM and DAM.

Chronology of raising price caps for 2021.

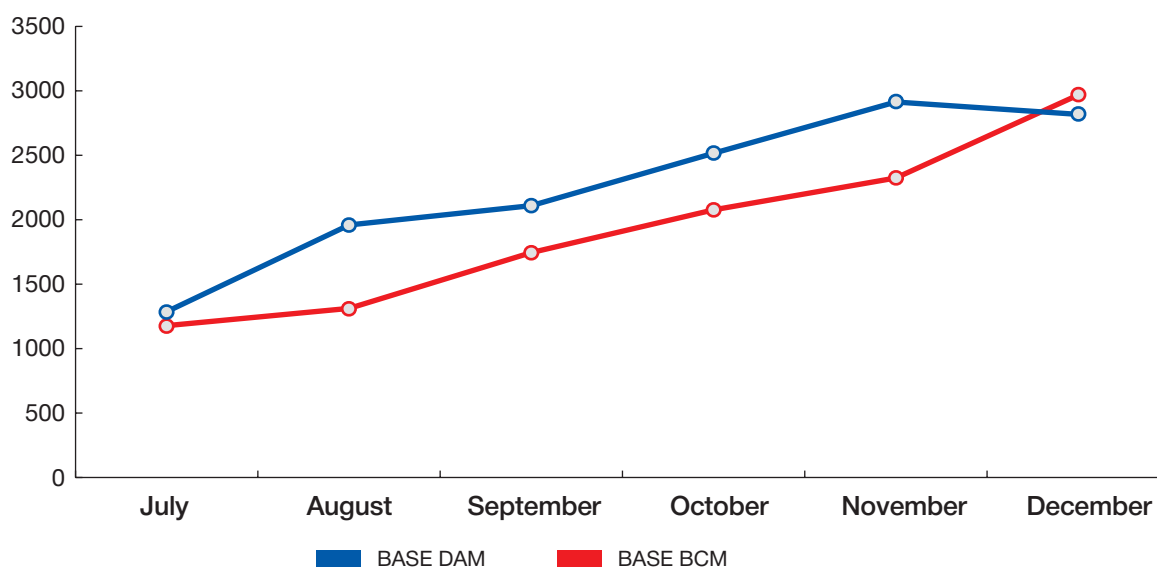
On June 16, 2021, price caps for the IPS of Ukraine trade zone were increased to UAH 1,243.71 / MWh at night and UAH 2,655.99 / MWh during the day.

On July 30, 2021, price caps for the IPS of Ukraine trade zone were increased to UAH 2,000 / MWh at night and UAH 4,000 / MWh during the day.

On October 7, 2021, price caps were increased from October 8 for the BEI trade zone to UAH 1,500 / MWh at night and UAH 2,500 / MWh during the day.

On December 24, 2021, price caps were increased from January 2 for the BEI trade zone to UAH 1,650 / MWh at night and UAH 3,000 / MWh during the day.

Comparison of DAM and BCM base load indices, UAH / MWh.



Paragraph 6 Part 2 of Art. 66 of the Law of Ukraine “On the Electricity Market” stipulates the obligation of state producers to sell electricity under bilateral contracts at electronic auctions, the procedure for which is approved by the Cabinet of Ministers of Ukraine.

Resolution of June 5, 2019 №499, approved the «Procedure for electronic auctions for the sale of electricity under bilateral contracts» (hereinafter - the Procedure №499).

The Ukrainian Energy Exchange has received the right to hold auctions for the sale of electricity on the market of bilateral agreements (hereinafter - BCM) of state producers in accordance with the results of competitive selection in accordance with the Procedure №499.

The Ukrainian Energy Exchange received the right to hold auctions for the sale of electricity on the market of bilateral contracts (hereinafter - BCM) of state producers in accordance with the results of competitive selection in accordance with the Procedure №499. To this end, the Ministry of Energy of Ukraine established a tender commission with the participation of representatives of the Ministry of Energy, the Ministry of Economy, the NEURC and the AMCU. Procedure №499 provides for the functioning of the Auction Committee, which includes

representatives of the Ministry of Energy, the NEURC, the Ministry of Economy, the Antimonopoly Committee of Ukraine and state sellers of electricity.

The Chairman of the auction committee is the Minister of Energy or his Deputy. The Exchange may conduct such auctions only and within the rules established by the Procedure № 499.

The moments of conducting auctions, which are not regulated by the Procedure, are determined in the regulations of the exchange, which are approved by the Auction Committee. In addition, the Auction Committee monitors the conduct of auctions for compliance with the rules of the auction participants and the exchange, develops and provides recommendations to the exchange on measures to maintain fair competition, determines the forms and technologies of the auction and more.

The Auction Committee fully determines and controls the conditions for conducting auctions for the sale of electricity and has the competence to change them.

Electricity purchase and sale transactions energy on UEEX is carried out in accordance with the Normative documents of the exchange in the following sections:

- Specialized sections
- Commercial sections

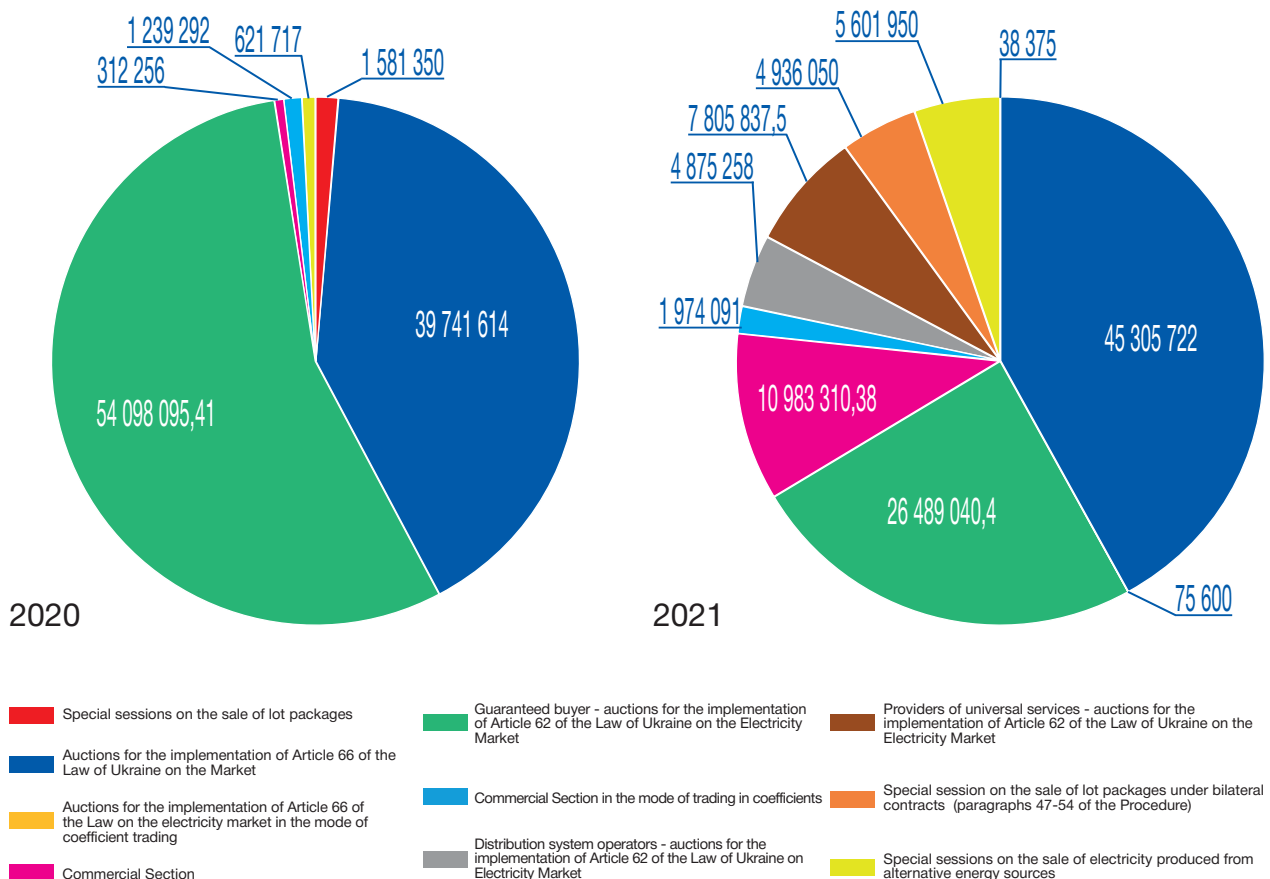
Directions for conducting auctions on UEEX

MARKET SEGMENT				SEGMENT OF REGULATED PRICES
Auctions for the implementation of paragraph 6 of Part 2. Art. 66 of the Law	Special session on the sale of electricity produced from alternative energy sources	Special session on the sale of lot packages	Commercial section	Auctions for the implementation of Article 62 of the Law (PSO) Special session
PARTICIPANTS – SELLERS				
State, municipal, private producers (Centerenergo, Ukrhydroenergo, Energoatom, others, on a voluntary basis).	Guaranteed Buyer	State, municipal, private producers. Other sellers, on a voluntary basis	In accordance to the Regulations of UEEX LLC - Electricity suppliers, traders	State producers who are entrusted with special obligations - Energoatom, Ukrhydroenergo
PARTICIPANTS – BUYERS				
Electricity suppliers Traders Consumers TSO DSO Guaranteed Buyer	Electricity suppliers Traders Consumers TSO DSO	Legal entities, 100 percent of the shares of which belong to the state Railway licensees	Guaranteed Buyer TSO DSO Electricity suppliers Traders Consumers Other participants of wholesale market	Supplier of universal services DSO

Specialized Section. Peculiarities

- The Software product «Exchange electronic trading system» in the version of «Electric Power» is used.
- Only the seller has the right to initiate the organization and conduct of the auction. The number of sellers and buyers in one auction is not limited.
- The approximate form of BC of purchase and sale of electricity is approved by the Auction Committee.
- A general account is available to guarantee compliance.
- **Auction process:**
 - **Registration of applications** – from the moment of the session to the end of the bidding period
 - **Trades:**
 - The main period - ends no later than 1 hour from the beginning of the bidding period (no later than 6 pm).
 - Additional period - ends no later than 1 hour from the beginning of the additional period (no later than 6 pm).
 - **Signing of certificates**

Volume of purchase and sale of electricity at UEEX, MWh.



According to the results of 2021, 891 auctions for the sale of electricity were held at UEEEX, of which 209 auctions for the implementation of PSO to ensure the public interest, 4 auctions for the sale of lot packages and 261 auctions in commercial sections.

During 2021, 2,480 starting positions were formed in the IPS of Ukraine trade zone and 142 in the BEI trade zone for the sale / purchase of electricity of various types of load. In 2021, the total volume of electricity sales on the market of bilateral contracts amounted to more than 108.5 million MWh (with PSO). The sold volumes of electricity in trade zones are as follows: in the «IPS of Ukraine» - 108.09 million MWh, in the zone «BEI» - 411.12 thousand MWh. In particular, 39.2 million MWh of electricity were sold at the Ukrainian Energy Exchange in the IPS of Ukraine trade zone at regulated prices of companies with special responsibilities in the electricity market - NNEGC Energoatom and PJSC Ukrhydroenergo. In general at the end of 2021, 415 participants were accredited on the UEEEX in the Electricity direction, of which 112 managed to join last year.

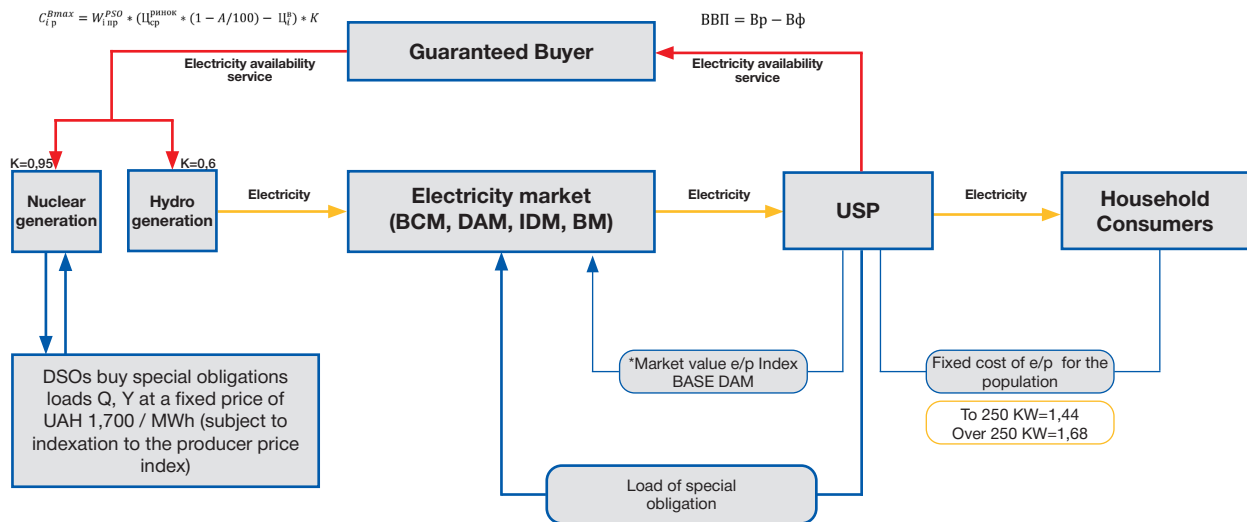
Auctions for implementation of Article 62

Auctions for implementation of Article 62 of the Law of Ukraine “On the Electricity Market” are held in order to fulfill special obligations of electricity market participants to ensure public interests in the functioning of the electricity market.

In 2021, commodity PSO operated in accordance with the resolution of the Cabinet of Ministers of June 5, 2019 №483. The sellers at such auctions were NNEGC Energoatom and PJSC Ukrhydroenergo, the buyer of SE Guaranteed Buyer. The sale of electricity within the PSO was carried out at fixed prices of NNEGC Energoatom - UAH 150/MWh, PJSC Ukrhydroenergo - UAH 10/MWh.

On October 1, 2021, the PSO financial model became operational. The sellers at such auctions are: electricity producers, which have the corresponding responsibilities (Energoatom NNEGC and Ukrhydroenergo PJSC). Exemplary contracts for the purchase and sale of electricity with SUP, ODS and to ensure the public interest approved by the Auction Committee. The PSO financial model is shown in the figure below.

Financial model of PSO



USPs purchase electricity from Energoatom in the amount of min of electricity consumption per hour in the same month of the previous year at the price of the DAM BASE index for the period M-3

Sales volumes of electricity under PSO obligations, MWh

	Guaranteed Buyer	ODS	SUS	In total (2021)
January	3 849 840,127			3 849 840
February	3 740 352,213			3 740 352
March	3 534 540,086			3 534 540
April	3 209 546,707			3 209 547
May	3 434 882,327			3 434 882
June	2 837 105,74			2 837 106
July	2 824 077,636			2 824 078
August	2 894 453,533			2 894 454
September	63 302,553	2 403 220,67	1 376 659	3 843 183
October	100 939,473		1 814 719	1 915 658
November			2 317 858	2 317 858
December		2 472 037,3	2 296 602	4 768 639

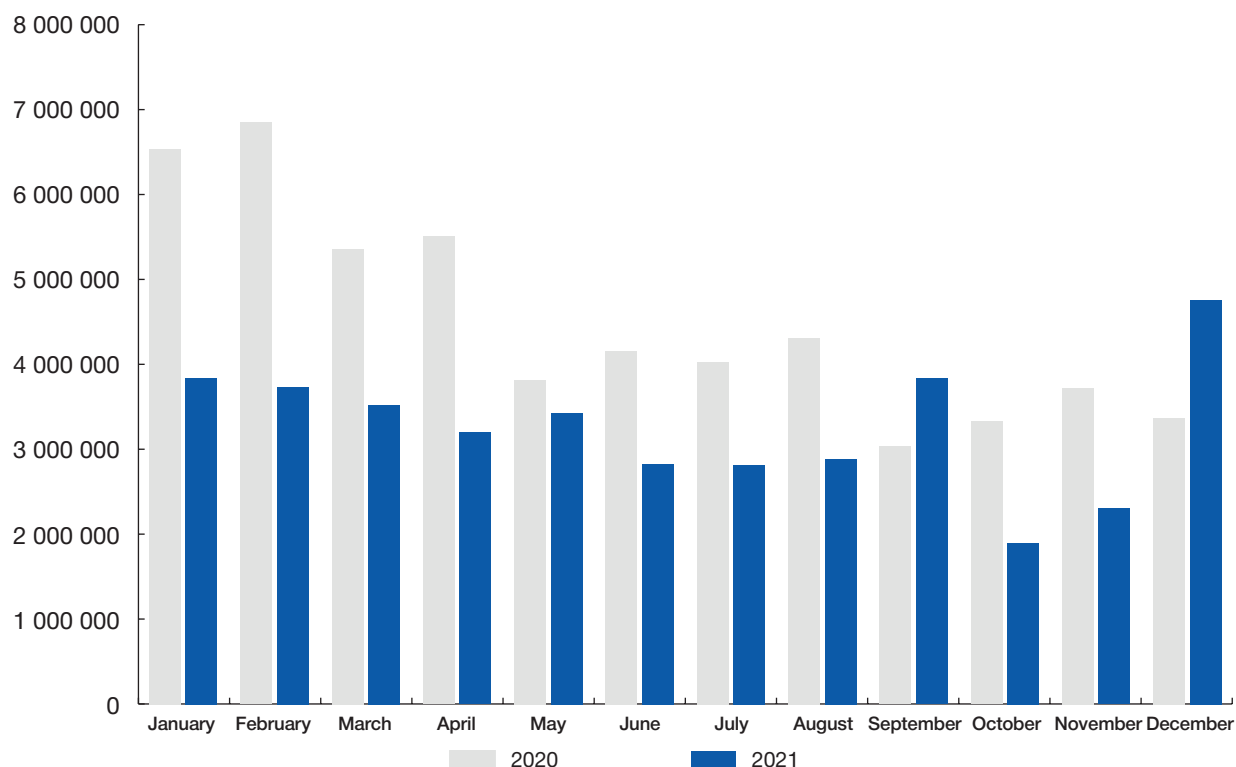
On the Ukrainian Energy Exchange in the IPS of Ukraine trade zone in 2020, 54.1 million MWh of base, peak electricity, non-working day load, block position and special obligation load were sold within the PSO.

In total, in 2021, 39.2 million MWh of electricity

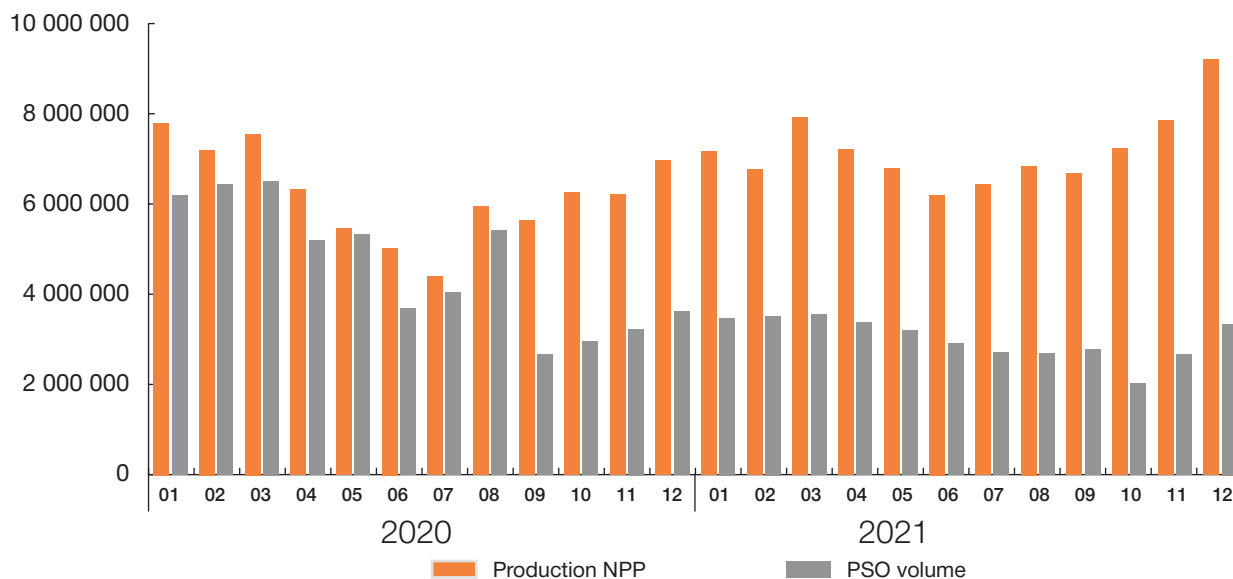
of the base load were sold by block positions and special obligations load, which is 27.5% less than last year's sales.

The trading instrument «Special obligation load» is necessary to meet the needs of household consumers in the trading zone «IPS of Ukraine».

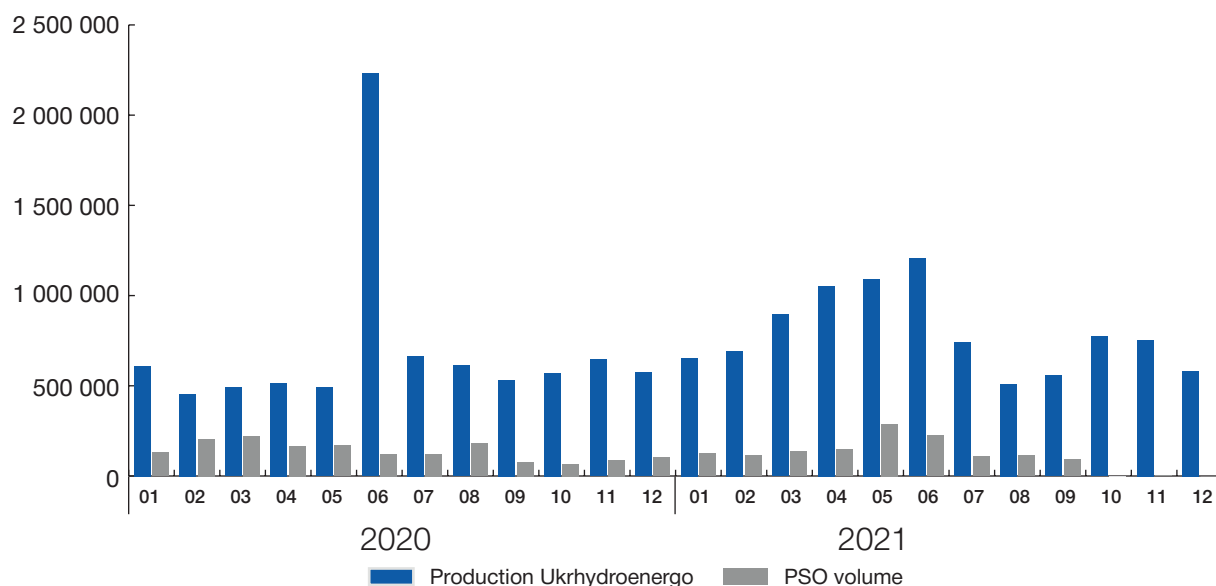
Sales volumes of electricity under PSO obligations, MWh.



Volumes of electricity sales of NNEGC Energoatom under the obligation of PSO for the period of supply, MWh.



Ukrhydroenergo electricity sales volumes under the obligation of PSO for the period of supply, MWh.



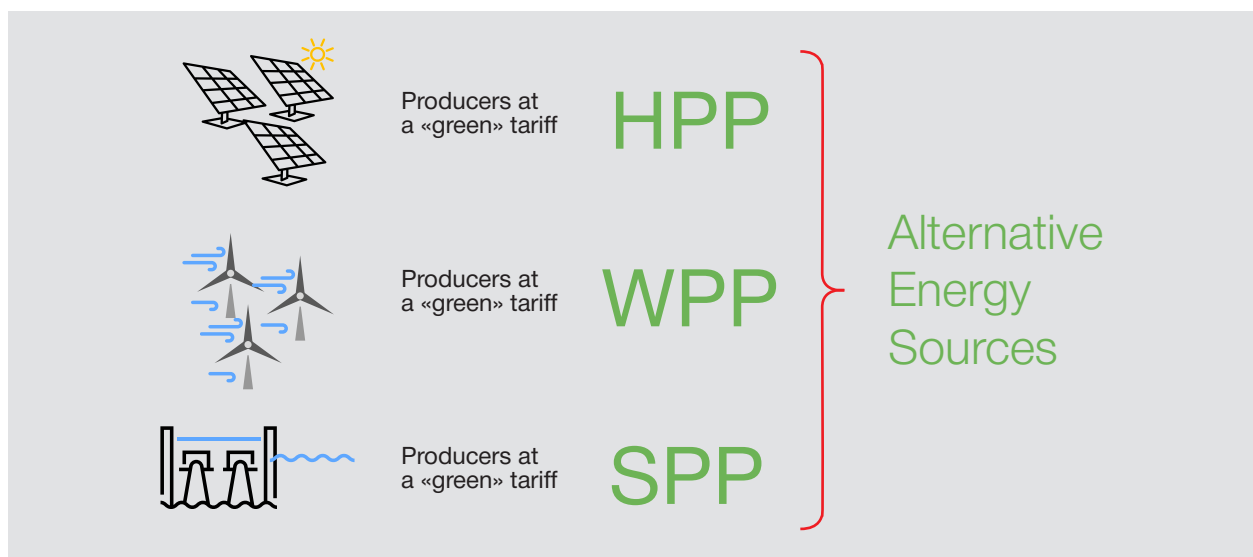
Auctions in the form of special sessions on the sale of electricity produced from alternative energy sources

On September 28, 2020, the Cabinet of Ministers adopted a resolution "On Amendments to the Procedure for Conducting Electronic Auctions for the Sale of Electricity under Bilateral Contracts". The decree required the sale of electricity produced from alternative energy sources under bilateral contracts at auctions in the form of special sessions. The starting price is determined by the Guaranteed Buyer according to a special formula set by the Procedure № 499. According to the formula, the

price takes into account the weighted average price and sales volume in the wholesale market segments for each trading hour and the number of settlement periods of the product within one trading day.

To implement the Clause 6-1 of Part 2 of Article 66 of the Law of Ukraine "On the Electricity Market", 43 such auctions were conducted by the Guaranteed Buyer, the volume of sales amounted to 5,601.9 thousand MWh.

Guaranteed Buyer Balancing Group



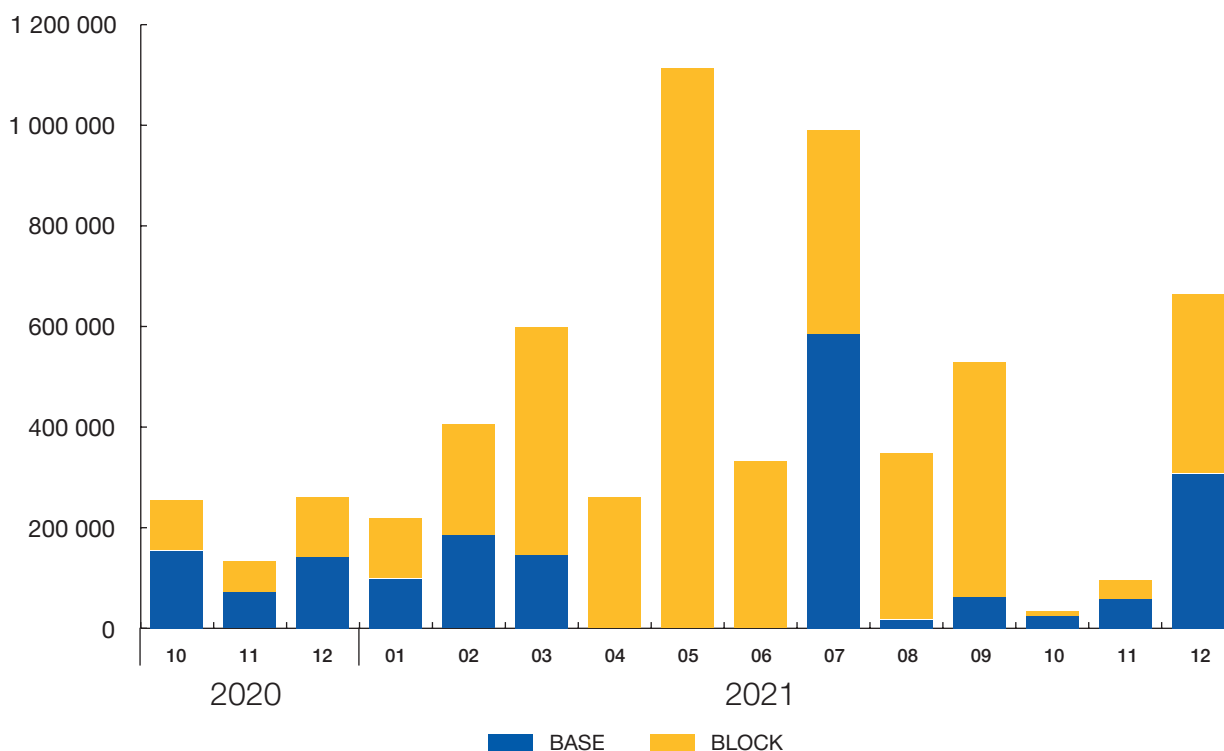
Auctions are held to raise prices. The starting price is determined by the Guaranteed Buyer according to a special formula:

$$\Pi^{CT} = \frac{\sum_{t^{st}}^{t^{fn}} \left(\frac{\sum_t^m (B^{PDH} + B^{BDP} + B^{HB} + B^{LD})}{\sum_t^m (O^{PDH} + O^{BDP} + O^{HB} + O^{LD})} \right)}{N^t}, \text{ гривень/МВт. год.}$$

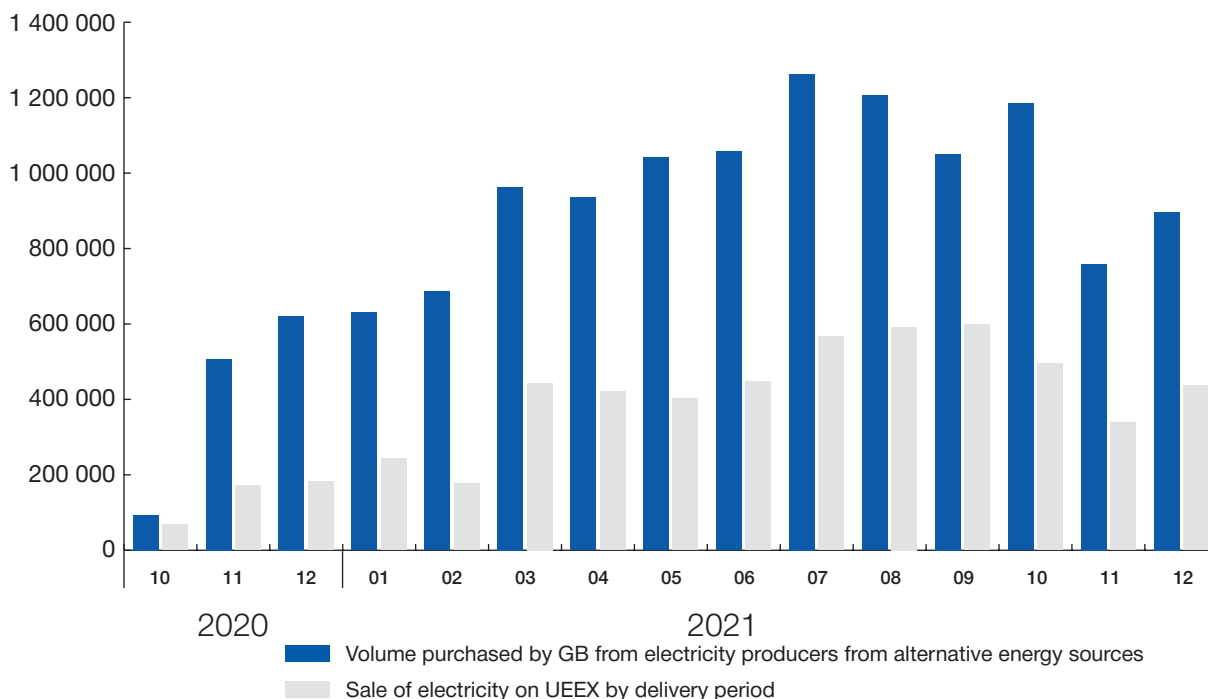
In 2020 (from October 5), 10 auctions were held for the sale of electricity produced from alternative energy sources, sales amounted to 654.5 thousand MWh. In 2021, the volume of electricity sales during

October-December amounted to 797.8 thousand MWh which is 22% more than in the same period last year.

Sales volumes of electricity produced from alternative energy sources, MWh.



Sales volumes of electricity by Guaranteed Buyer for the period of supply to UEEX, MWh.



Auctions for implementation of the Article 66

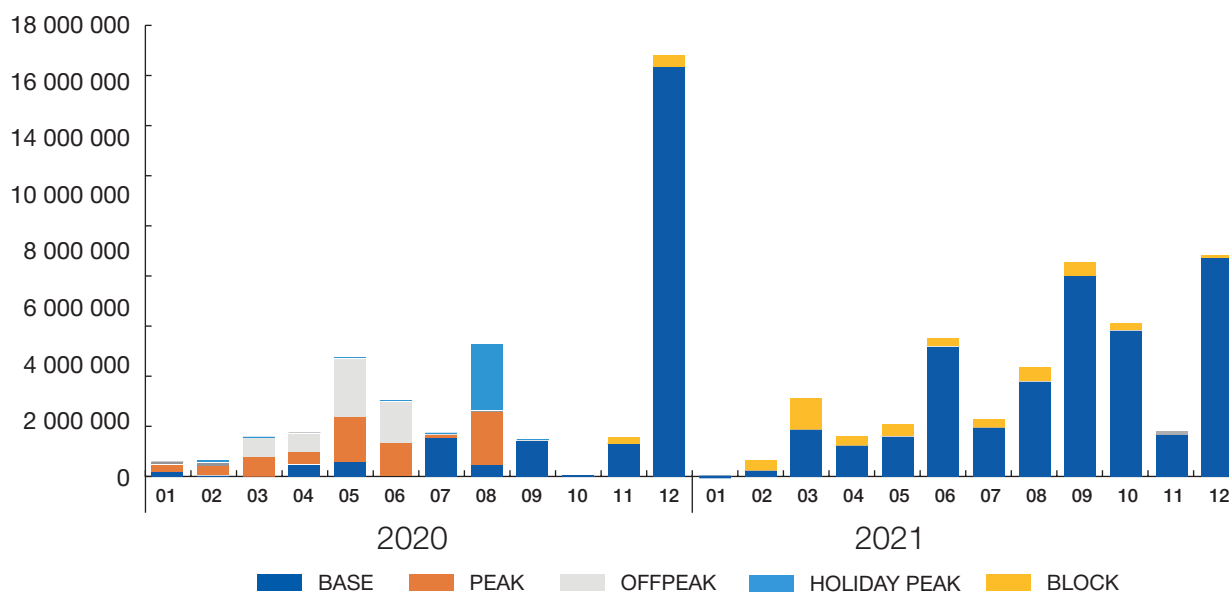
In general, for 2021 at UEEX, at auctions for the implementation of paragraph 6 of Part 2 of Art. 66 of the Law of Ukraine «On Electricity Market» in the trade zone «IPS of Ukraine» was sold 45.4 million MWh. 232.2 thousand MWh were sold in the Burshtyn Island trade zone.

Until July 2021, Part 6 of Article 67 of the Law of Ukraine

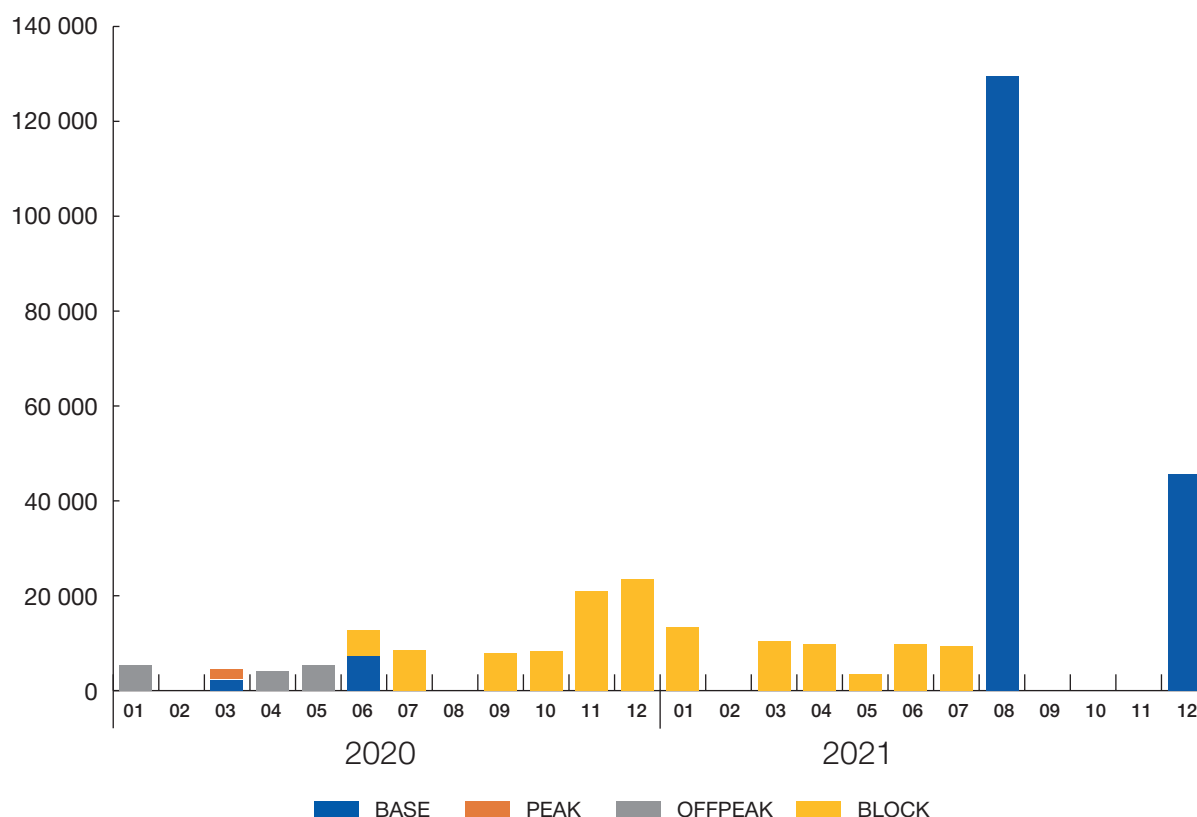
«On the Electricity Market» contained a rule that the prices of DAM and IDM can be used as a guide for concluding transactions for the purchase and sale of electricity.

In accordance with the Law of Ukraine «On the Electricity Market» dated 14.07.2021 391639 -IX such a rule was repealed in order to promote the BCM index. The use of DAM prices in bilateral contracts is not a common practice when trading on UEEX. To implement the paragraph 6 of Part 2 of Art. 66 there were two auctions with formula pricing linked to DAM. Sales amounted to 75.6 thousand MWh.

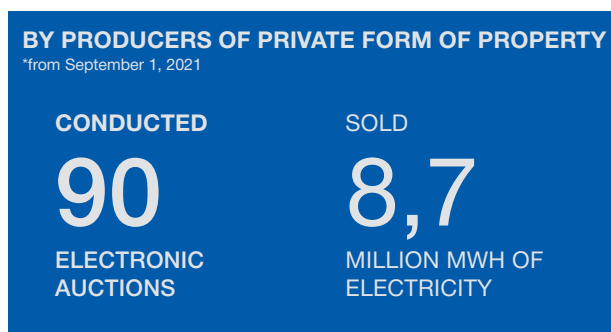
Sales volumes (by types of schedules) of electricity in the IPS of Ukraine trade zone on UEEX, MWh.



Sales volumes (by types of charts) of electricity in the BEI trade zone on UEEX, MWh.



Until September 1, 2021, only state and municipal electricity producers were obliged to sell at electronic auctions. According to the Law of Ukraine of 14.07.2021 «On measures aimed at overcoming the crisis and ensuring financial stability on the natural gas market» in order to ensure transparency and equal conditions for electricity producers of state, municipal and private ownership on the electricity market the latter were obliged to sell electricity under bilateral contracts exclusively at electronic auctions of the UEEX.



Thus, privately producers (except for those producers who have set «green» tariff, and electricity producers, who have acquired the right to support as the result of the auction) conducted 90 electronic auctions and sold 8,7 million MWh of electricity.

Special sessions on the sale of lot packages

In 2020, amendments to the Procedure were adopted №499. According to the procedure of holding a special session on the sale of lot packages under bilateral contracts, Energoatom was able to sell up to 5% of the projected production volume. In 2021, 2 auctions were held, as a result of which 38.38 thousand MWh of base load of electricity were sold. At such auctions, electricity was sold only to the end consumers.

In September 2021, in accordance with the Procedure № 499, the conditions for holding a special session on the sale of lot packages are defined in Government Resolutions № 791 of July 28, 2021 and № 983 of September 22, 2021 JSC Ukrzaliznytsia was given the opportunity to purchase electricity on the UEEX in indivisible packages of 25 lots with a delivery time of up to 36 months.

Implementation of lot packages

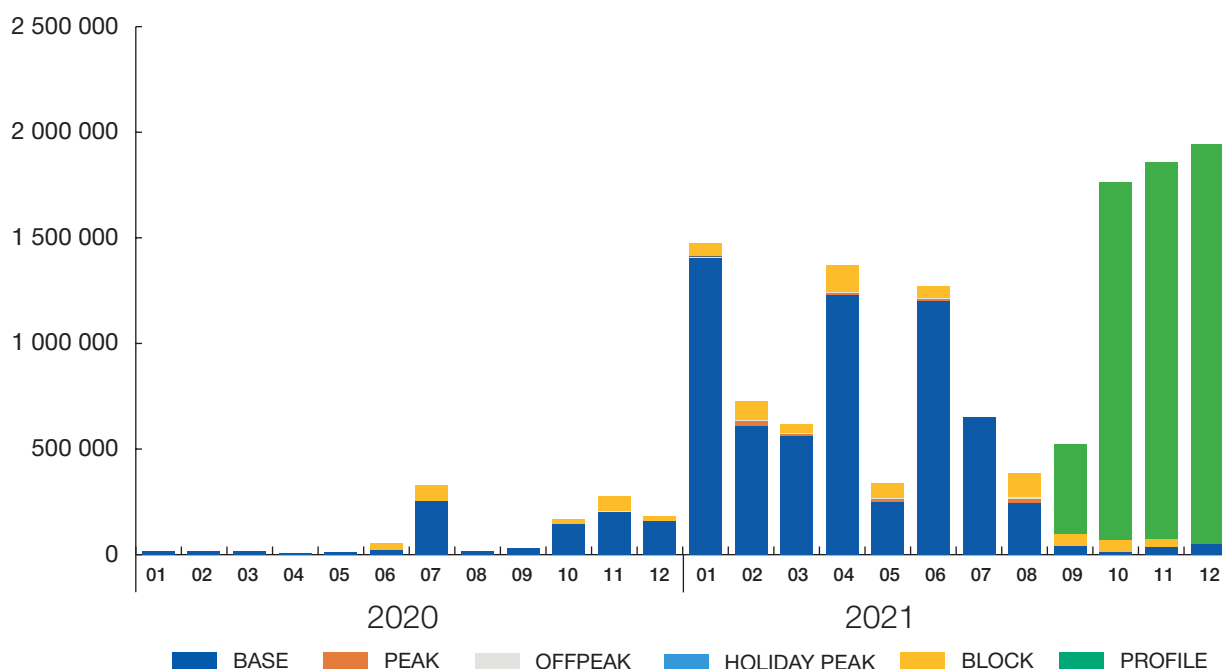
Indicator	2020	2021
Volume, MWh	1581000	4974425
Number of auctions	6	5
Type of sales schedule	BASE	BASE

Commercial section

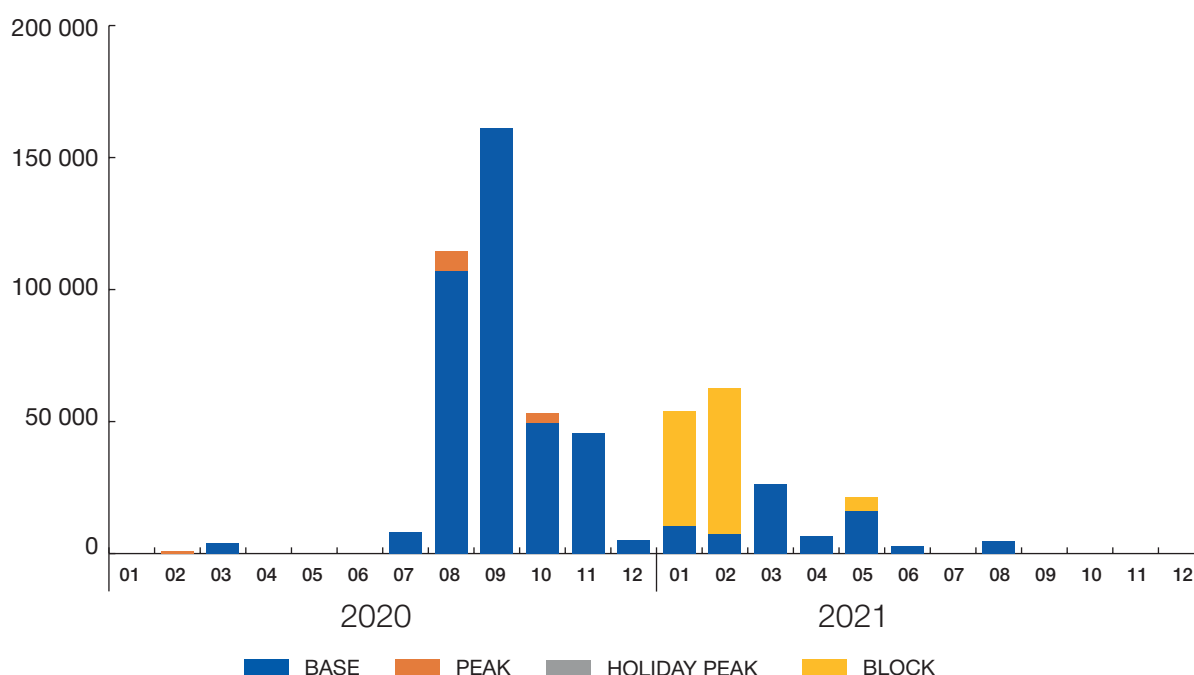
In order for both private producers and traders to be able to trade electricity under bilateral contracts, as well as for buyers to be able to initiate auctions, a commercial section for the purchase and sale of electricity under bilateral contracts was established at UEEX. Auctions in this section are held in accordance with the «Regulations for organizing and conducting electronic auctions for the purchase and sale of electricity under bilateral contracts

in commercial sections of the Ukrainian Energy Exchange.» In total for 2021 in the commercial section the total volume of purchase and sale of electricity on the market of bilateral contracts amounted to 13.14 million MWh. The sold volumes by trade zones are as follows: IPS of Ukraine 12.96 million MWh, in the BEI trade zone 178.89 thousand MWh.

Sales volumes of electricity in the IPS of Ukraine trade zone on UEEX, MWh.



Sales volumes of electricity in the BEI trade zone on UEEX, MWh.





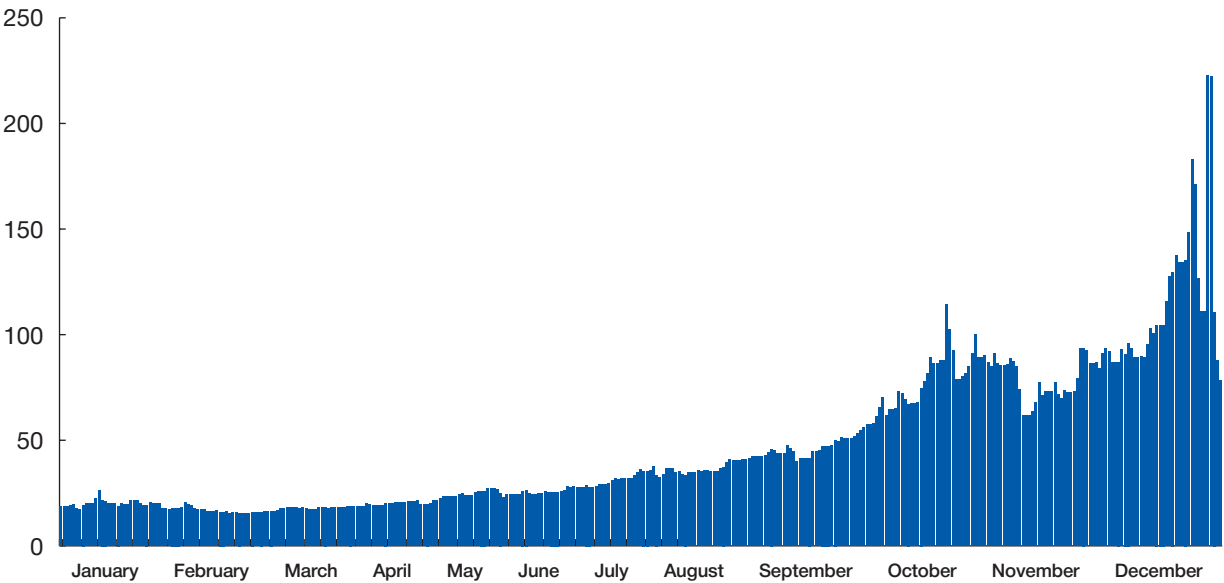
NATURAL GAS

Last year was marked by an acute energy crisis in Europe and Ukraine. Never before has the industry faced such an unpredictable and unstable market situation. Low UGS occupancy, opposition to the

resource constraints, which led to a return to price regulation in the absence of PSO.

The record low price of gas in 2020 halted investment activity, which affected the overall decline

The price of the European hub TTF, EUR / MWh.

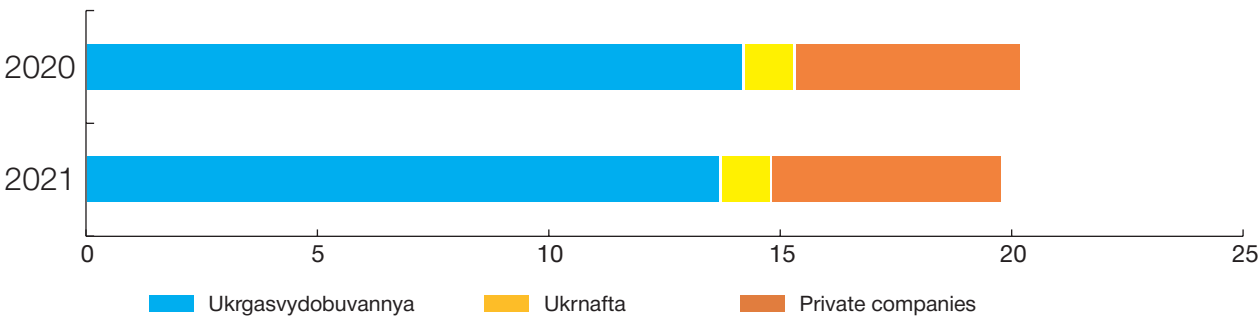


launch of Nord Stream 2, high LNG prices, rapid transition to clean energy sources and economic recovery have led to record price increases that began in the summer.

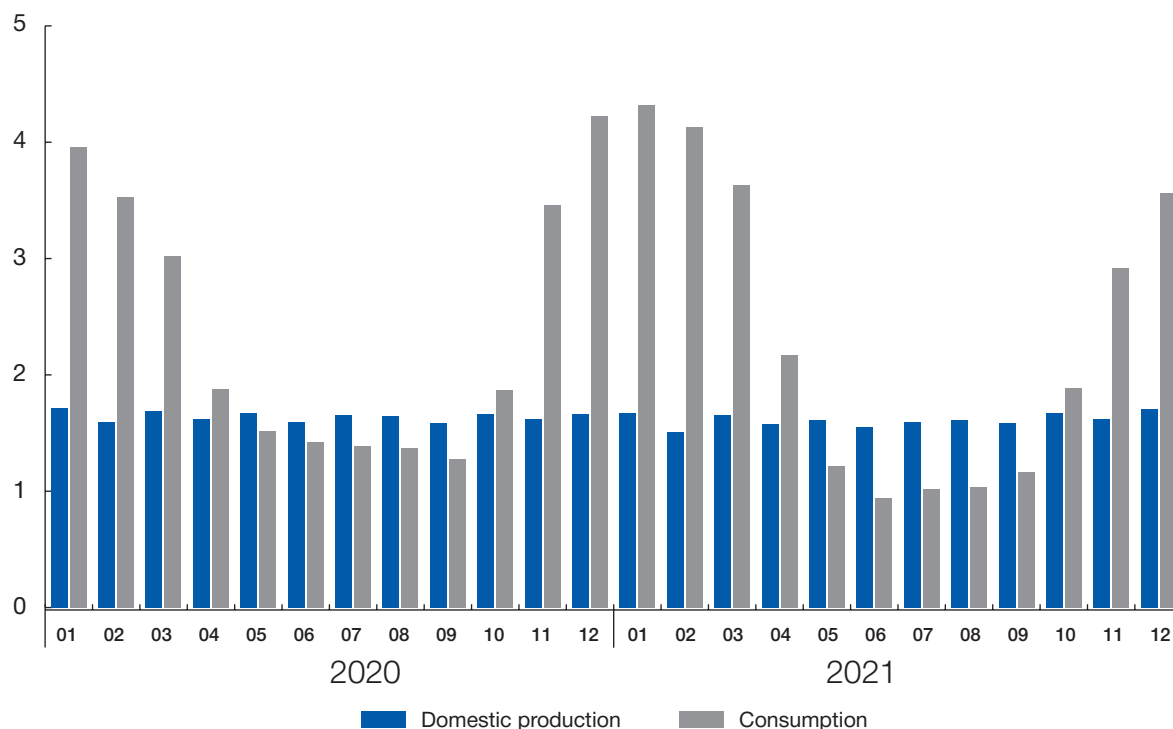
This has led to an unprecedented situation in the domestic market of Ukraine. Prices rose under

in production. 2021 was a special year for domestic gas production, as private gas production companies produced a record 5 billion cubic meters and confidently took the share of 25% of all domestic gas production in the fall of production of state-owned companies.

Structure of domestic production, billion cubic meters



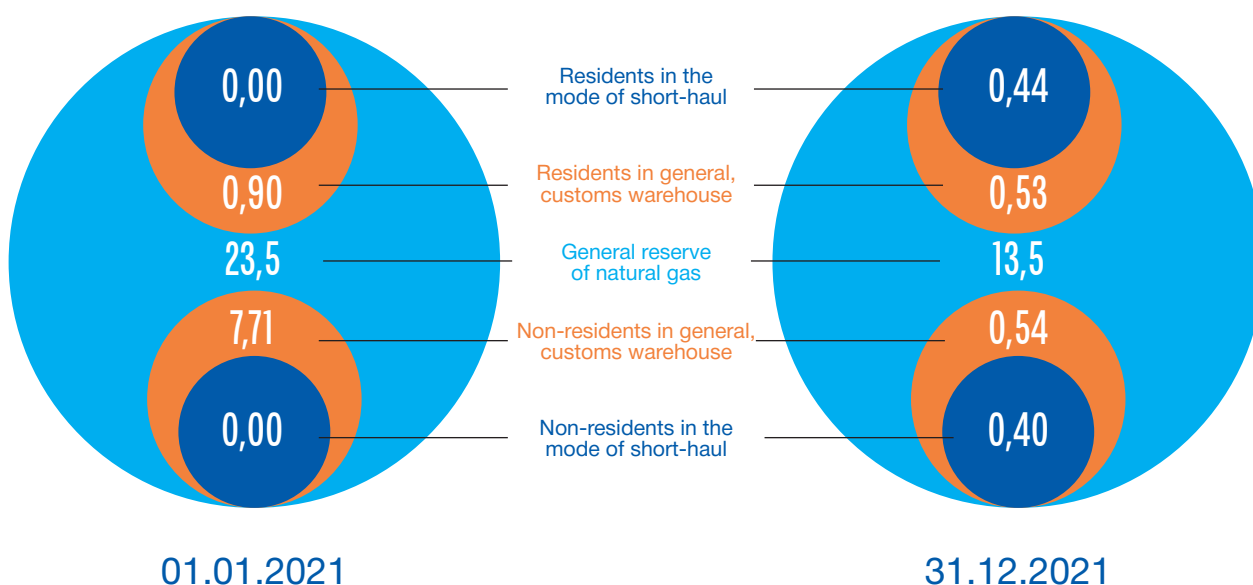
Natural gas production and consumption in Ukraine, billion cubic meters



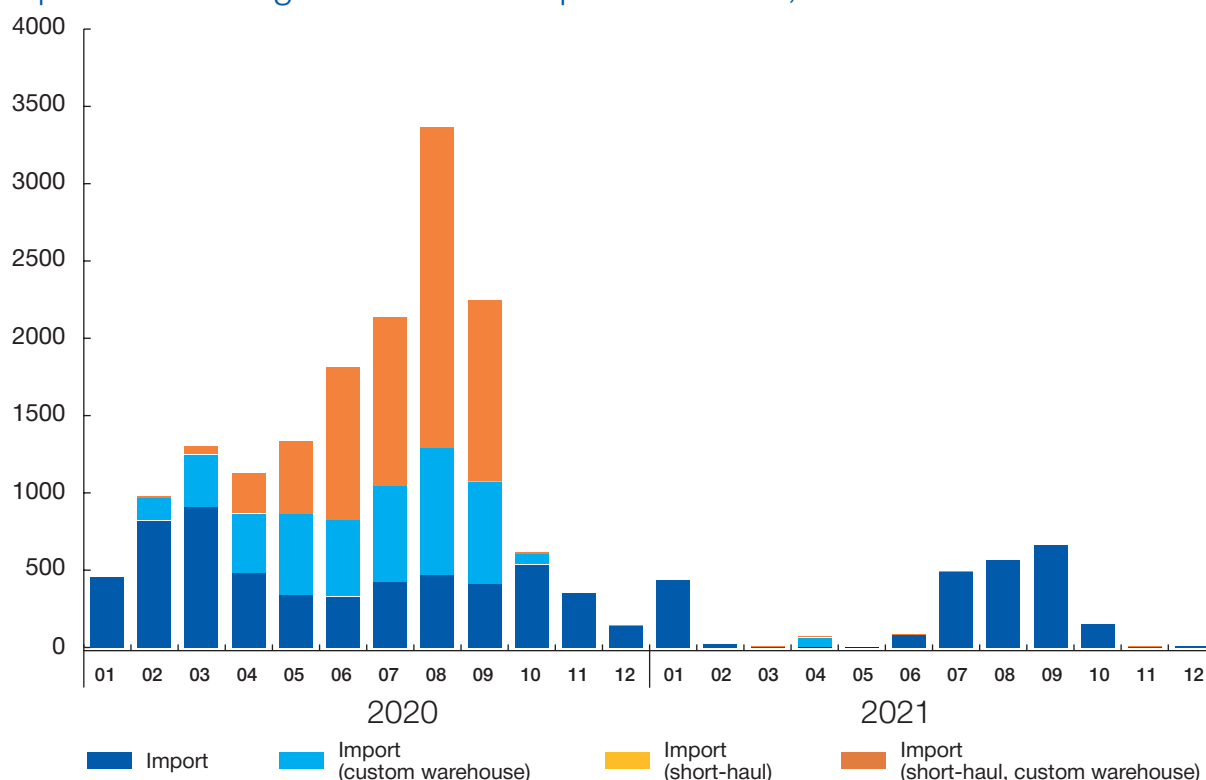
In general, natural gas consumption during the year was almost 10% lower than the previous year, which is associated with a record high price. Thus, according to the GTS Operator of Ukraine, industry, budget organizations and other non-household consumers used 3% less fuel than last year, and HPA - 24% less.

On December 31, 2021, natural gas reserves in Ukrainian underground gas storage facilities amounted to 13.5 billion cubic meters, which is twice lower than the same value at the beginning of the year. The storage facilities were 44% full. This is due to the outflow of gas stored in storage by non-residents and a decrease in imports during the year.

Natural gas storage in Ukraine, billion cubic meters



Import of natural gas from the European direction, million cubic meters



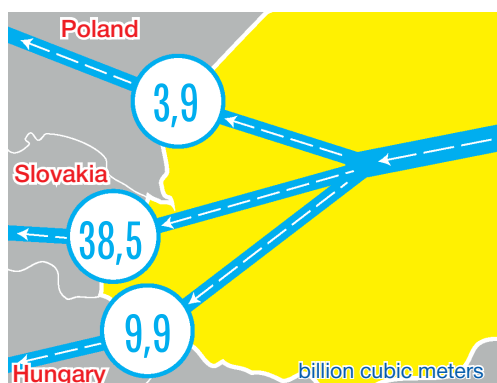
Last year, imports of natural gas fell by 84%, which was affected by imbalances between supply and demand, price trends in Europe. After all, it was European companies that provided the vast majority of import flows a year earlier for storage in Ukraine's underground gas storage facilities. In 2021, there was a reverse trend - exports, which by the end of the year exceeded 2 billion cubic meters.

The Ukrainian GTS is used by less than a third of the total transit capacity of 146 billion cubic meters per year. Under the terms of the contract with Gazprom, signed in late 2019, in 2020 the minimum transit volumes were set at 65 billion cubic meters and only 40 billion cubic meters in 2021-2024, which

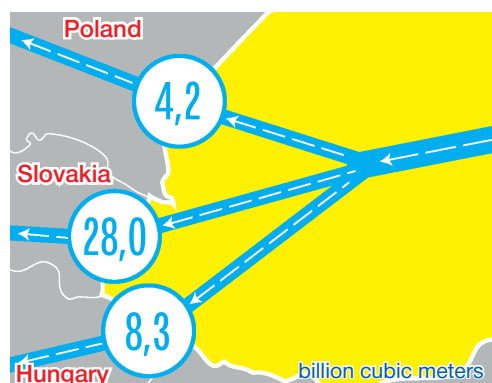
is associated with the construction of the Russian gas pipeline Nord Stream- 2 ».

Differences in the volume of Russian gas transit through Ukraine, including, among other basic areas, affected price fluctuations in Europe. On the other hand, the reduction in transit to Romania and Hungary is due to the transition of these countries to gas by bypass routes of Gazprom: from April 1, physical transit through Ukraine's GTS to Romania was suspended, from October 1 - to Hungary. In general, the possibilities of the Ukrainian transit route (sufficient to overcome the gas crisis in Europe) were not used.

Transit in the main directions - a downward trend

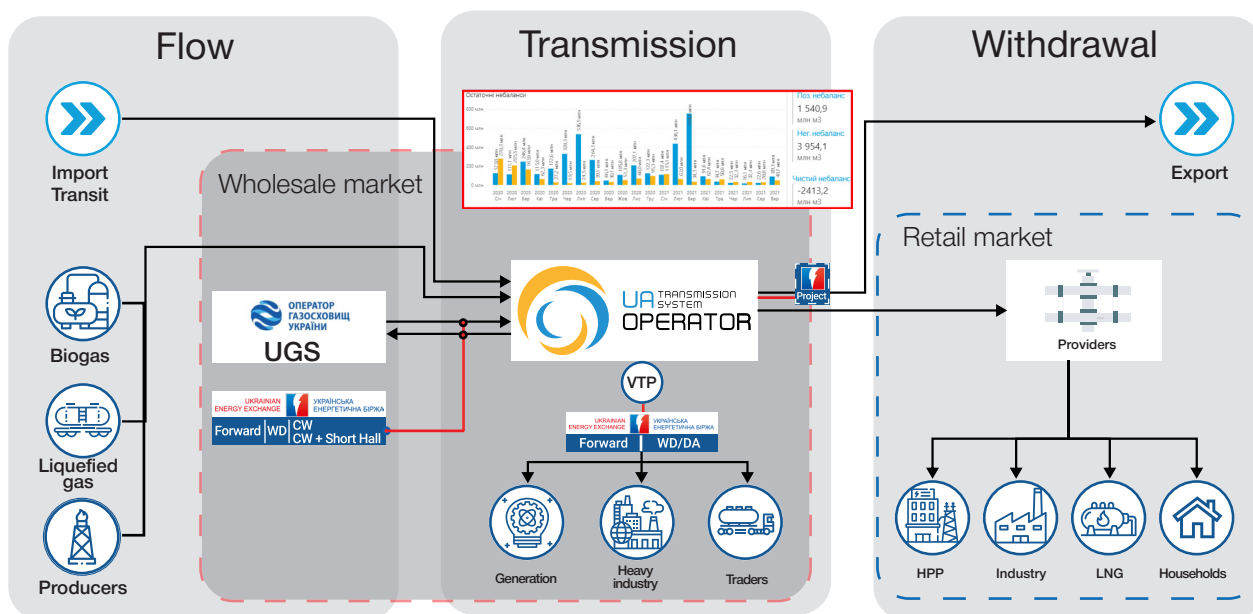


2020



2021

Ukraine's market potential and the place of UEEX



Ukraine has completed the implementation of the requirements of the EU's Third Energy Package on the natural gas market. The country has no legal obligations to trade in natural gas on the exchange. At the same time, UEEX became the only exchange that established exchange trading.

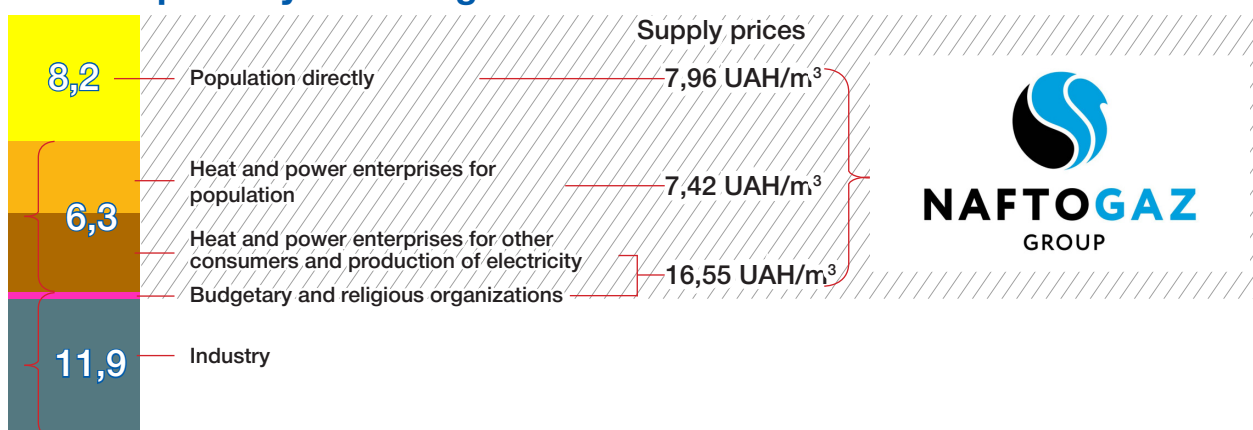
Naftogaz Trading Group, a member of the Naftogaz Group, has been actively selling natural gas to UEEX since 2019. Thus, in 2021 Gas Supply Company

Naftogaz Trading Group LLC sold 1.69 billion cubic meters to UEEX. In particular, the decision of the Antimonopoly Committee of Ukraine of December 24, 2020 states that Naftogaz undertakes to sell natural gas of its own production through the exchange in the amount of at least 15%, except for gas sold under special obligations. on the implementation of Article 11 of the Law of Ukraine «On the market natural gas».

PSO for the population was abolished on August 1, 2020, for HPA - on May 1, 2021. However, not all volumes of the natural gas market were free for circulation in a competitive market. In order to prevent a situation of significant price increases for the population, the NEURC approved a resolution introducing an annual tariff for suppliers from May 1, 2021 to April 30, 2022.

Naftogaz also signed three-year contracts for the supply of HPA gas and in the fall of 2021 began supplying natural gas to budgetary institutions, offering to sign contracts for a period of 15 months.

Consumption by the categories in 2021



Trade in natural gas on UEEEX

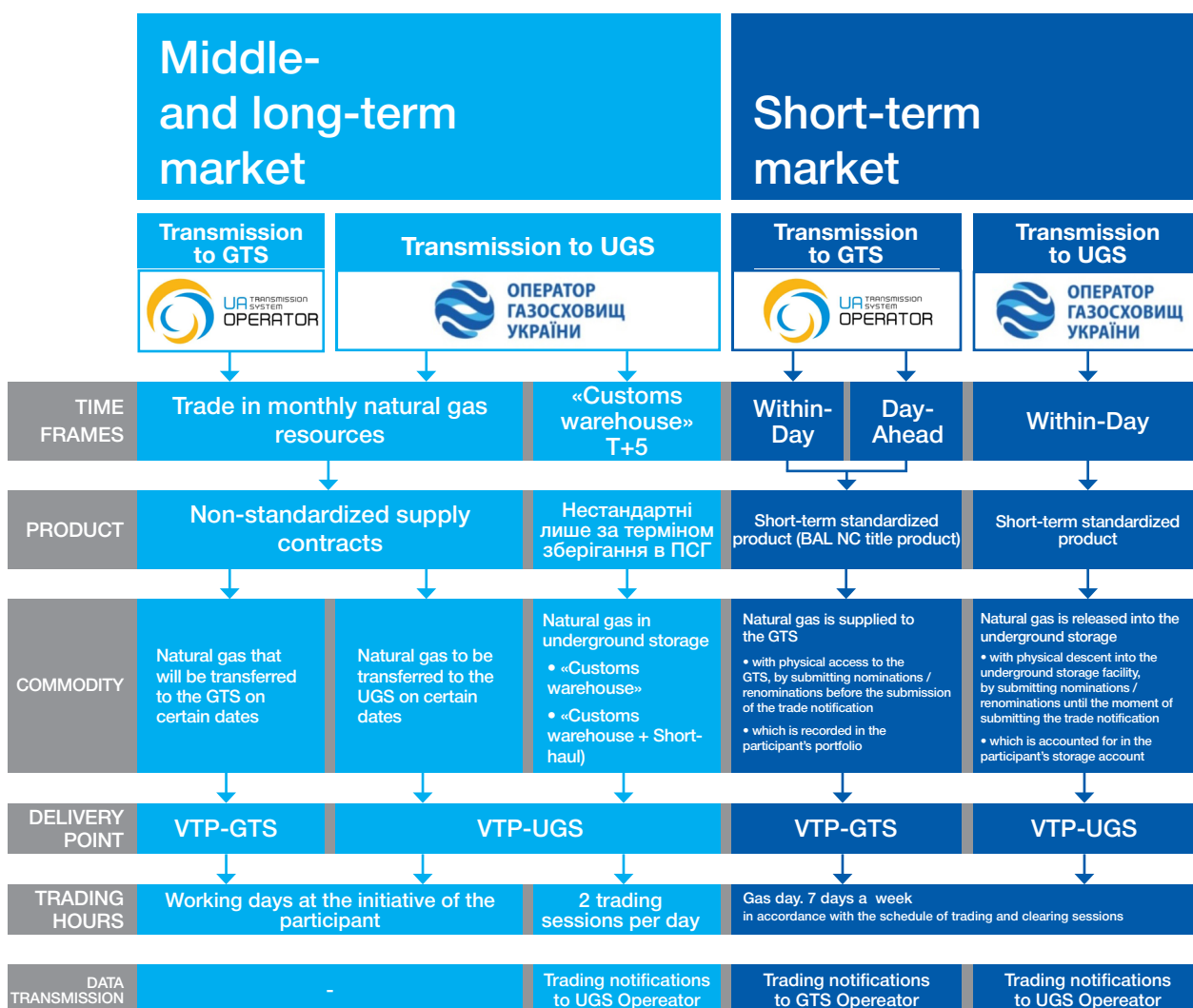
Natural gas on UEEEX is represented in two markets: medium- and long-term market and short-term market. The medium- and long-term market trades monthly or long-term contracts with delivery over several months. The short-term market consists of the within-day market and the day-ahead market with the VTP GTS supply point and the within-day market for underground storage. Bidding is on short-term standardized products. This is a continuous trade within the gas age.

From November 1, 2021, UEEEX together with the Gas Storage Operator Ukrtransgaz opened the opportunity for customers of gas storage services in underground storage facilities to trade in two new products: natural gas stored in UGS in the customs regime «customs warehouse» and natural gas stored in gas storage facilities in the customs regime «customs warehouse» under the conditions of simultaneous use of capacity with restrictions («short-haul»).

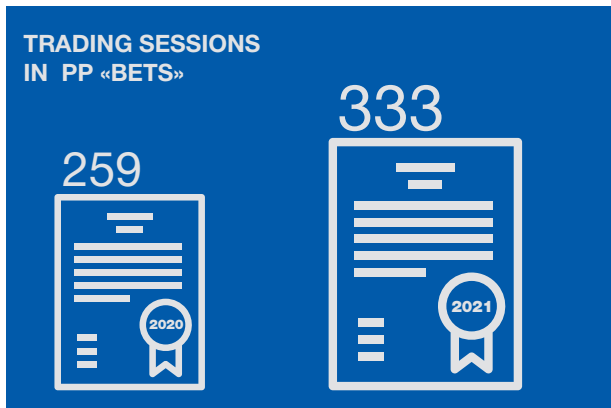
The new mechanism is somewhat different from the

already proposed by UEEEX, as it involves pre-blocking the seller of gas, which becomes the property of the buyer only after full payment of its cost. That is, on day T + 5 after the auction, participants confirm payment for the goods, followed by the purchase and disposal of natural gas based on the results of consideration of trade notifications by the UGS Operator. Ukraine and non-residents who have the opportunity to store imported gas from the Customs Warehouse regime for up to 1,095 days without paying customs duties and VAT, as well as buyers wishing to purchase gas from UGS can participate in the auction.

UEEX received the approval of the NEURC of its rules and regulations for compliance with the requirements of the GTS Code. Thus, UEEEX is the only exchange that meets the requirements of the Law of Ukraine «On Amendments to Article 3 of the Law of Ukraine «On Public Procurement» № 1021-IX on natural gas procurement and is a trading platform within the meaning of the GTS Code and EU Regulation № 312.



Trade in natural gas on the UEEX Middle- and long-term market



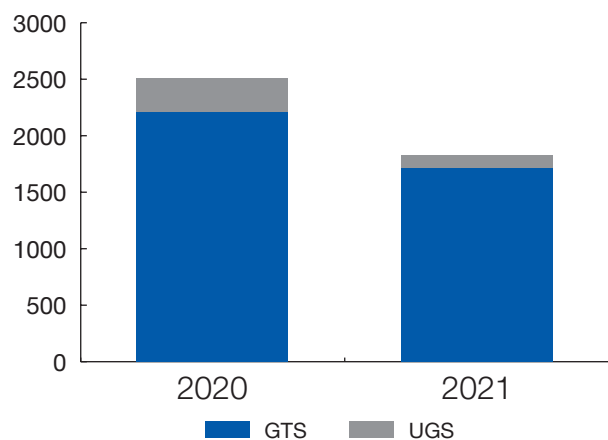
Last year, UEEX managed to maintain the high performance in natural gas trade achieved earlier. In total, 1.83 billion cubic meters of natural gas were sold in all market segments. 333 trade sessions were held in PP «BETS», of which 166 were sold natural gas resources. For comparison, in 2020 259 trading sessions were held, and in 2019 - 218.

In 2021, UEEX managed to attract 101 new participants to trade in Natural Gas. Thus, as of the end of the year, 450 companies were accredited for natural gas trade. In total, 556 transactions were concluded on the UEEX medium- and long-term market during the year.

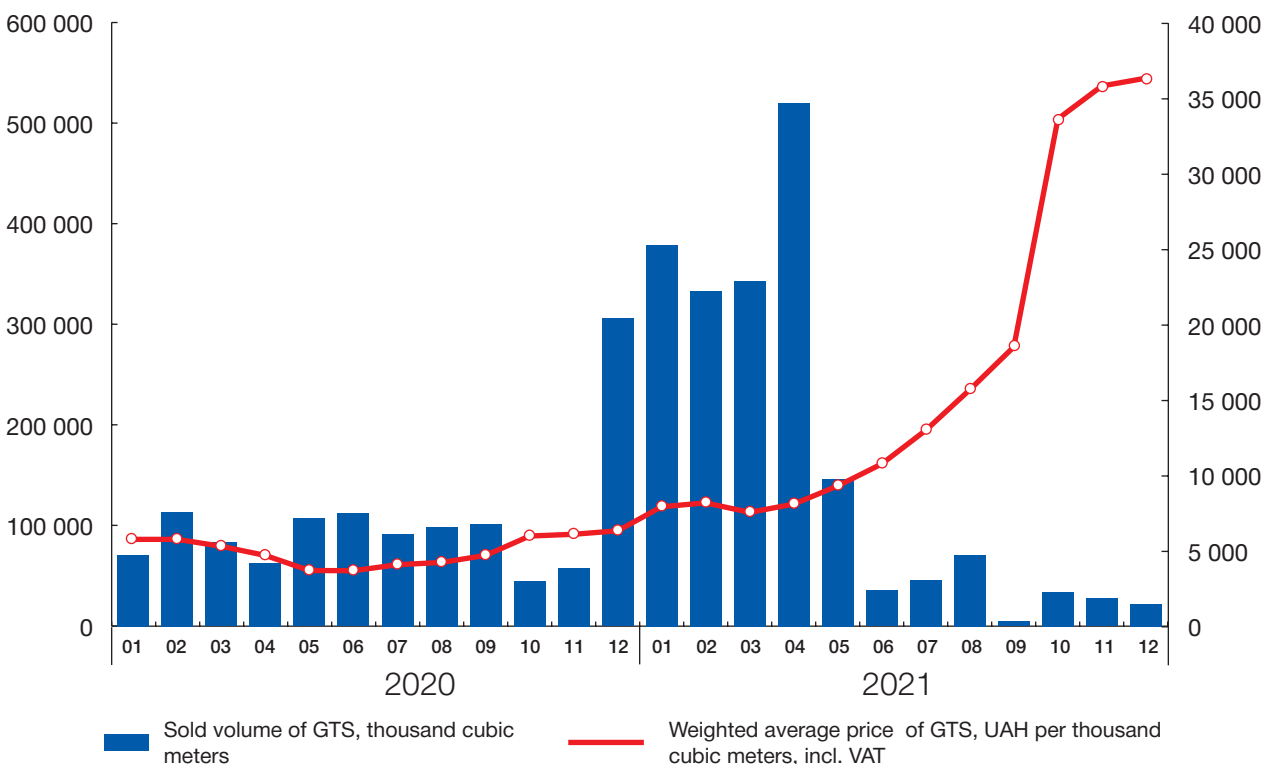
The initiators of natural gas trading were 94 companies, which is 18 more than last year. Of these, the largest number of initiated positions fell on Naftogaz Trading Group LLC (2129), Kraft Energy LLC (653), Centerenergo LLC (498), and De Trading LLC (199). There was a tendency for participants to exhibit purchase positions. Thus, of the total number of starting positions for the year - 4740 - 18% were formed for the purchase of natural gas.

Trade took place mainly on a monthly basis with the VTP GTS basis, but 7% of natural gas volumes were sold in underground storage facilities.

Sales of natural gas by supply bases, million cubic meters



Results of sales of monthly natural gas resources in the GTS of Ukraine, except for bidding with the use of differentials



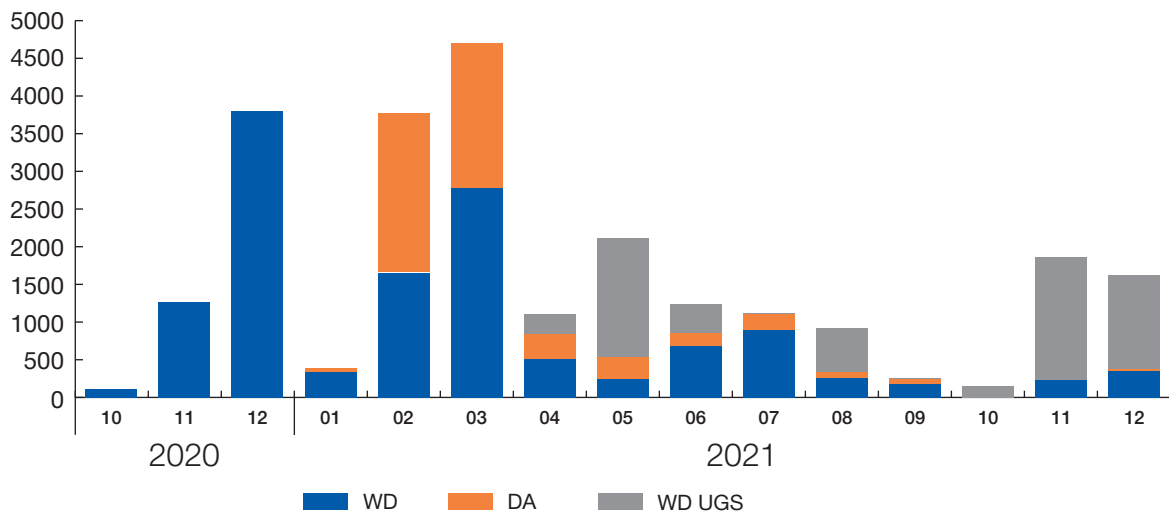
Natural gas trading at UEEX. Short-term market

In 2021, UEEX launched a short-term market of natural gas in UGS in the customs territory of Ukraine and in the customs warehouse regime, which significantly expanded trade opportunities, especially for non-residents. Trade in the Within-day market and in the Day-ahead market in the GTS, where 13.5 million cubic meters of natural gas were sold, was stable. The introduced conditions allow market participants to balance portfolio and trade in natural gas within the current (or next) day.

by the GTS Operator. Accordingly, in the same month GTS operator of Ukraine has entered into the Short-term market for the first time. By the end of 2021, the GTS Operator had concluded several agreements at UEEX, but the company's activity on the exchange increased in early 2022, when the balancing service agreement expired. From January 2022, marginal prices began to be determined based on the results of trading on the UEEX, thus implementing the European balancing practice, which was prepared to launch in 2021.

Within-day market prices were correlated with GTSOU prices, which are using for determination of the marginal price of purchase and sale of natural gas.

Short-term market of natural gas sales, thousand cubic meters

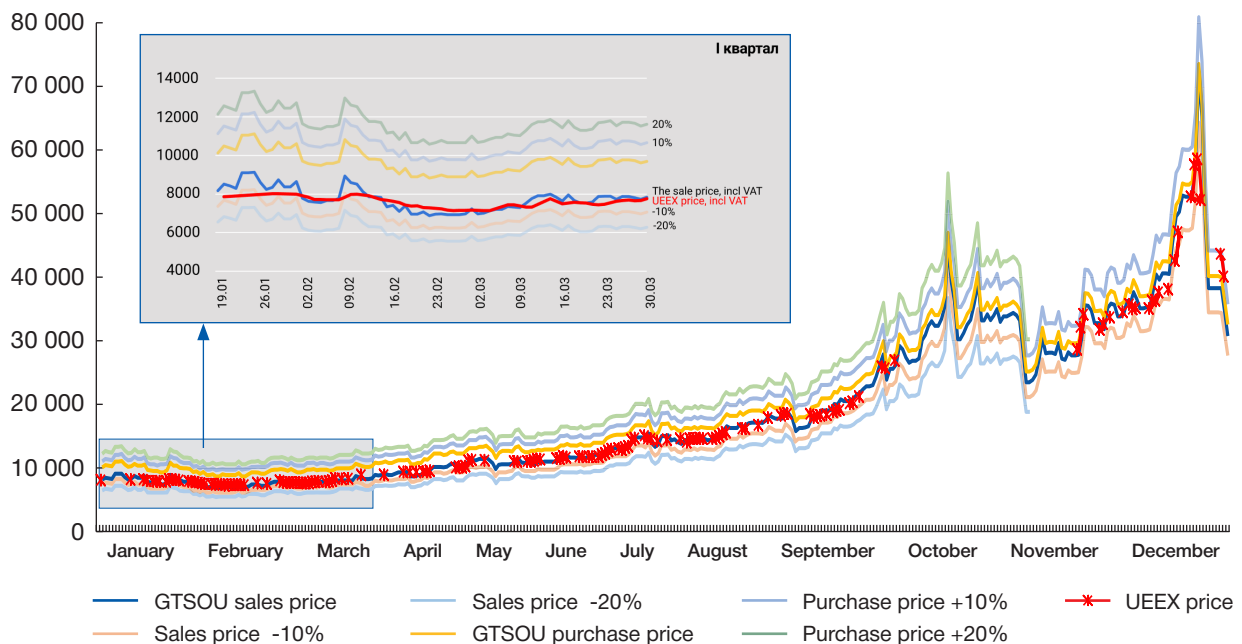


At the end of last year, 62 companies were accredited in this area.

In June 2021, by the results of the tender, UEEX was chosen as an Exchange to perform balancing actions

However, as the Rule, UEEX price which indicated market price level, was lower, which indicated the need to adjust the formal approach to determining of marginal prices.

Comparison of UEEX short-term market prices and GTSOU prices



OIL AND GAS CONDENSATE

Global oil market

If in 2020 the market suffered from a shock at the demand side, in 2021 the recovery of consumption began in conditions of potentially unstable supply.

In 2021, oil prices were highly volatile and reached 90 USD / bar. The complex set of factors influencing price dynamics has been compounded by the effects of the pandemic, which are closely linked to demand prospects.

By the end of December, Brent prices had risen close to 80 USD per barrel.

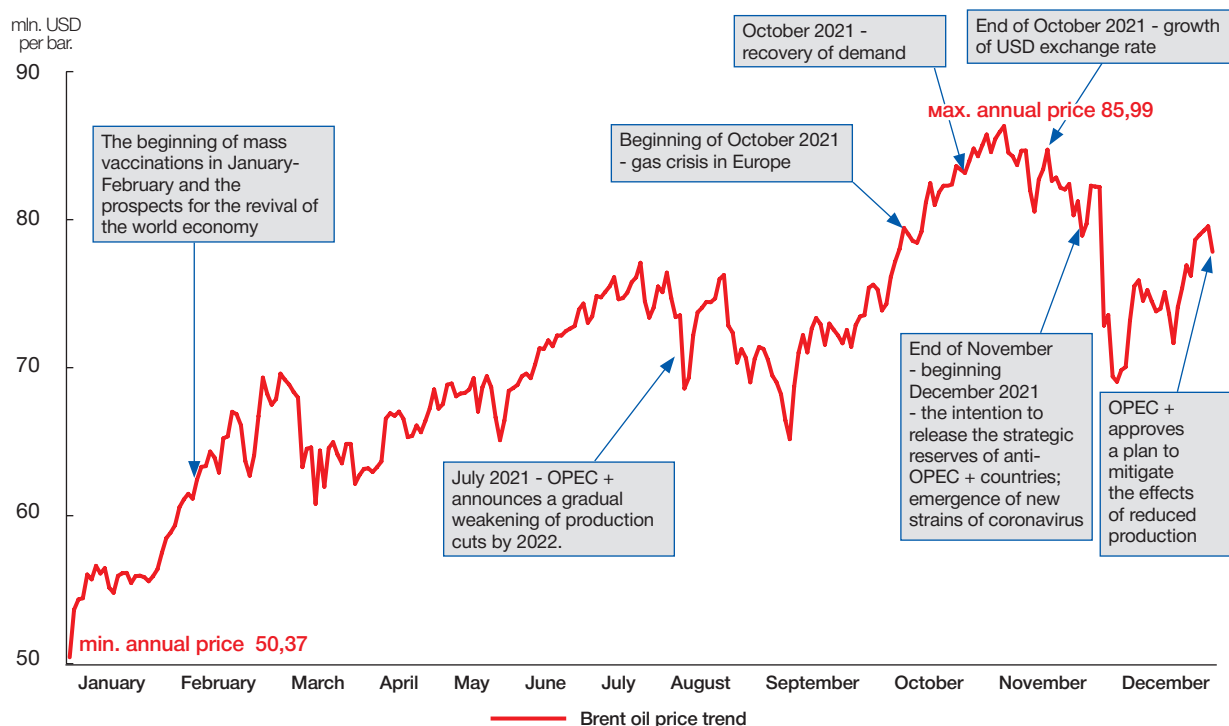
During 2021, there was significant volatility in Brent oil prices due to the pandemic and its ability to affect oil demand. According to the results of the year, the average price was 71 USD per barrel, and grew by 55% per year. Summing up, in 2021 the market had a deficit of 1,2 million barrels per day.

World oil consumption in 2021 averaged 96,9 million barrels per day, which is 5,0 barrels per day more than in 2020.

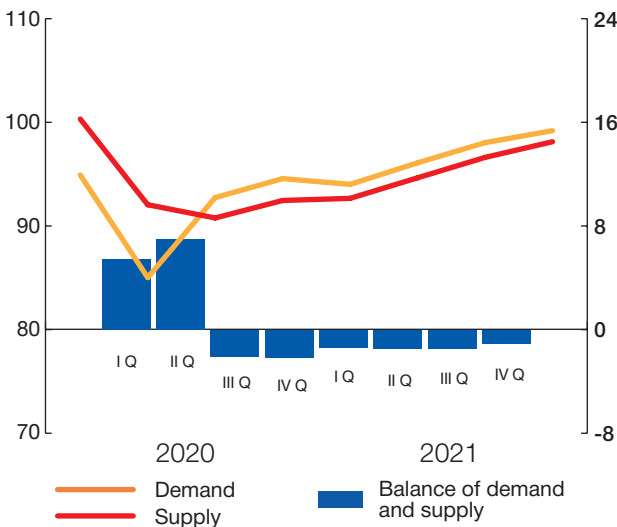
Brent oil price range, USD / barrel

Fluctuation	2020	2021
Min	9,12	50,37
Max	70,25	86,40

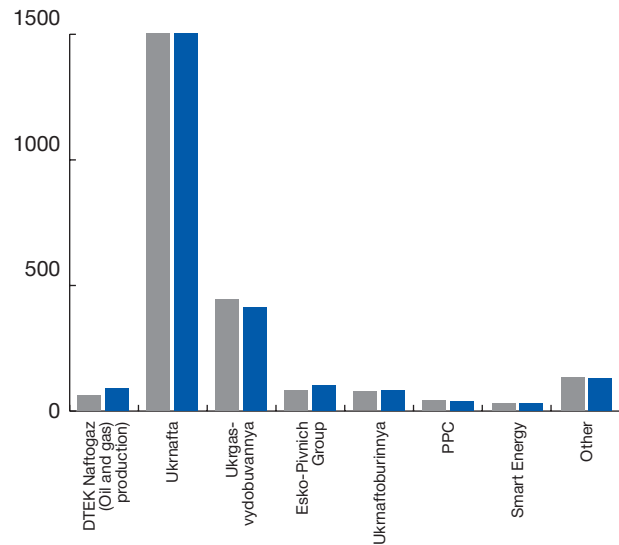
Brent oil price trend in 2021



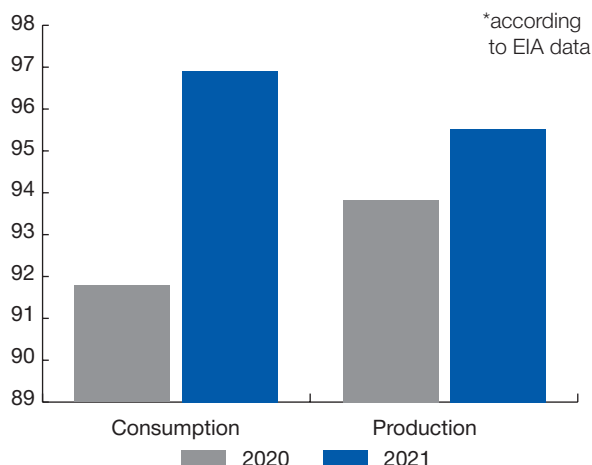
Word balance of oil demand and supply for 2020-2021, mln., bar./day



Distribution by companies of domestic oil and gas condensate production in 2020 - 2021, thousand tons



Word balance of oil demand and supply for 2020-2021, mln., bar./day*



Ukraine market of oil and gas condensate

Ukraine market of rude oil composes both rude oil of own production and import. The volume of oil and gas condensate production in Ukraine is declining every year. The critical reduction in oil supplies to Ukrainian refineries has led to saturation of domestic imports. Most domestic refineries, unable to compete with imports, reduced or stopped production, in particular, for modernization. The market structure is oligopolistic and is characterized by the presence of dominant oil and gas companies operating in all market segments (production, refining and sales). The trend of high economic concentration with uneven regional distribution persists.

In 2021, oil and gas condensate production in Ukraine remained almost at the level of 2020 - 2,415 million tons. In the structure of production in 2021 - 1670 thousand tons accounted for oil and 731 tons of gas condensate.

The largest national oil and gas condensate producers are PJSC Ukrnafta and Ukrgasvydobuvannya.

In 2021, the production volume of PJSC Ukrnafta amounted to 1,499 million tons, when in 2020 the company's share in the total production of oil with gas condensate in Ukraine amounted to 62,5% or 1,501 million tons.

The production volume of JSC Ukrgasvydobuvannya in 2021 amounted to 414 thousand tons against 446 thousand tons in 2020.

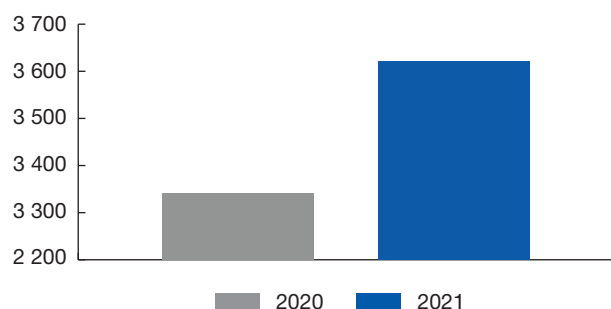
Among the largest private oil companies in Ukraine are the following: Burisma Group, PJSC Naftogasydobuvannya, PJSC Ukrnaftoburinnya, Natural Resources CJSC, PPC JV. In 2021, private mining companies produced 501,5 thousand tons of raw materials, against 474 thousand tons in 2020.

The total volume of oil transportation in the past year almost unchanged and amounted to 15,7 million tons, which is 0,2% less than in 2020. JSC Ukr-Transnafta transported about 3 million tons of oil to Ukrainian refineries in 2021, which is 15% more than in 2020, when it received 2,6 million tons. The transit of oil by pipeline through the territory of Ukraine decreased in 2021 to 12,7 million tons - by 3,2% from 2020.

Oil and gas condensate are processed by Kremenchug Refinery and Shebelinsk Refinery.

The volume of processing by the Kremenchug refinery in 2021 amounted to 3,2 million tons, compared to 2,92 million tons in 2020, which came from the production of PJSC Ukrnafta and imported raw materials. Shebelinsky GPP reduced the volume of processing to 420,57 thousand tons in 2021 from the indicator of 2020 - 422,5 thousand tons. In total, the volume of processing increased in 2021 and amounted 3,62 million tons compared to 2020 - 3,34 million tons. About 40% of the volume of oil refining in Ukraine is provided by imported supplies. In 2021, Ukraine increased the import of oil and crude oil (according to the commodity nomenclature of foreign economic activity (CN FEA) 2709) by 25,3% compared to 2020 - up to 1,561 million tons. Oil imports

Processing by domestic enterprises in 2020-2021, thousand tons



during 2021 carried out from Azerbaijan, Great Britain, Algeria and Libya. Ukraine exported 89,96 thousand tons of oil to Romania in 2021, although the export of oil and crude oil from Ukraine in 2020 amounted to 80 thousand tons and was sent to Belarus.

The price of oil sales on the domestic market of Ukraine is set taking into account world oil prices, political factors and the current situation in the oil market.

Oil and gas condensate trade at UEEX

The sale of oil and condensate of its own production by enterprises is held exclusively in accordance

with the Law of Ukraine “On Oil and Gas” and the Resolution of the Cabinet of Ministers of Ukraine of October 16, 2014 № 570.

Thus, state-owned enterprises were given the right to determine exchanges for auctions, PJSC Ukrnafta chose UEEX as a result of competitive selection. State regulation in Ukraine obliges PJSC Ukrnafta to sell crude oil and gas condensate of its own production on a monthly basis.

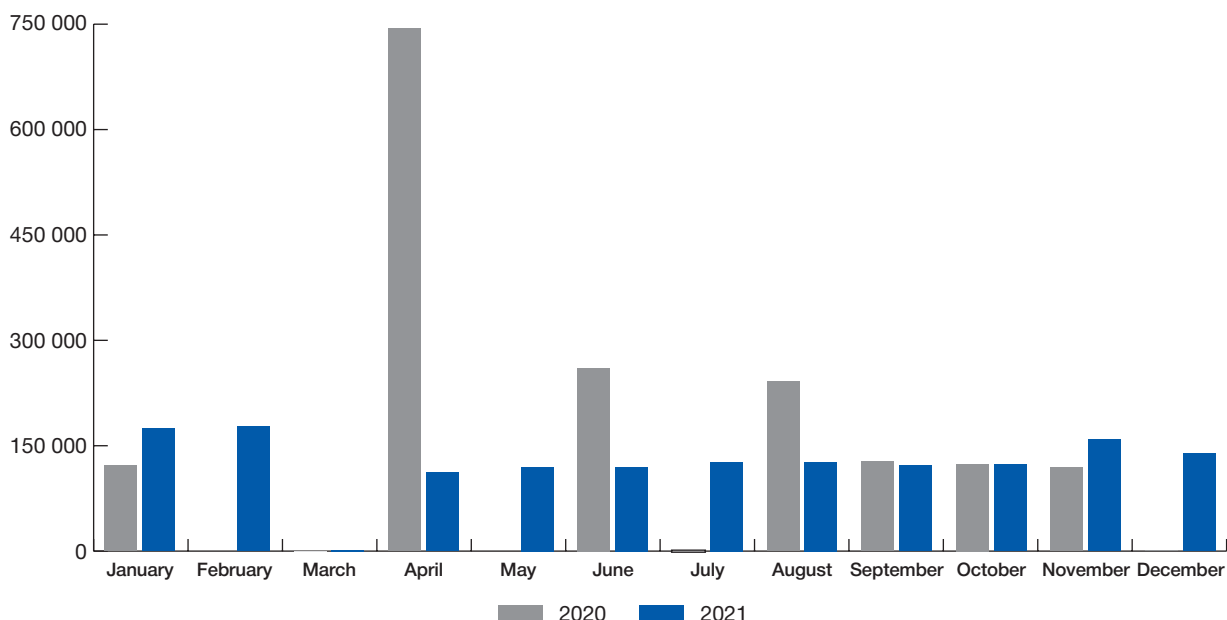
Other companies may initiate trading on the UEEX in accordance with the Rules of Exchange Trading on the Ukrainian Energy Exchange and the Regulations for Electronic Exchange Trading on the Ukrainian Energy Exchange. Sales are made at unregulated prices.

The main participants are PJSC Ukrnafta, JSC Ukrgasvydobuvannya, KNK LLC, etc.

At the end of 2021, 156 companies were accredited at UEEX in the direction of Oil and Gas Condensate. During 2021, 1,53 million tons of oil and gas condensate was sold by UEEX.

During the year, 42 trading sessions were held in this area and 249 exchange certificates were concluded. A significant increase in world oil prices has led to an increase in weighted average oil and gas condensate prices by more than 35% since the beginning of the year, reaching the highest values in December.

Sales volumes of oil and gas condensate at UEEX in 2020-2021, th. tons



OIL PRODUCTS AND LIQUEFIED GAS

Market of Ukraine

Over the past two years, the Ukrainian oil market has increased fuel consumption to record levels. In total, in 2021, 12,41 mln. tons of liquefied gas, petroleum and diesel fuel were consumed which is 7,53% more than in previous year. One of the reasons for the growth is the increase in traffic flow in Ukraine. For their own safety due to the pandemic, people prefer their own transport to public transport. Also, the use of vehicles running on diesel fuel for large-scale collection of agricultural products and construction of roads has increased the demand for this type of fuel. It should be noted that the consumption of road bitumen also increased to 1,42 million tons (1,19 million tons in 2020).

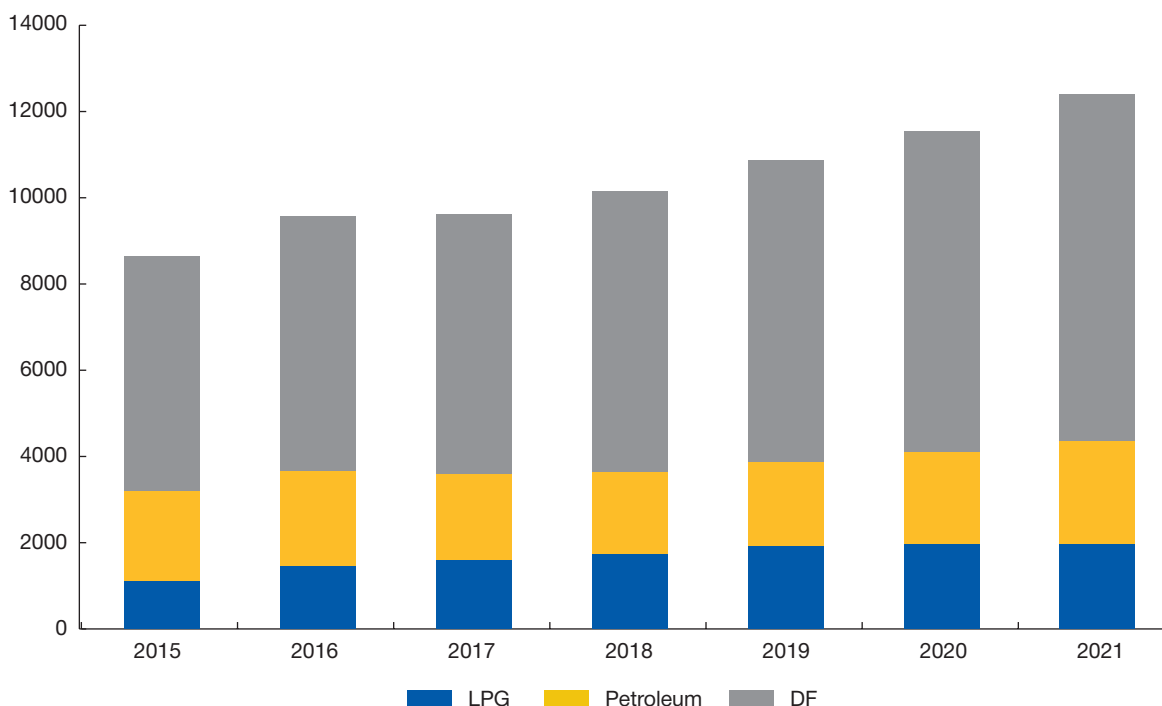
One of the important news in the fuel market was the adoption of a resolution by the Cabinet of Ministers of Ukraine on state regulation of prices. In particular,

amendments were made to Government Decree №1236 of 9 December 2020. In accordance with the new wording for the period of quarantine the maximum levels of trade surcharge to the average price of diesel fuel (not more than UAH 7 / liter) and gasoline (not more than UAH 5 / liter) were set.

Diesel fuel

The largest share in the overall structure of fuel is occupied by diesel fuel, which accounts for about 70% of the market. In addition to diesel cars used in the industrial and agricultural sectors, a large percentage in the private sector (additional increase in consumption) was caused by the import of cars from the European direction. In 2021, the diesel fuel market for the first time exceeded 8 million tons of consumption, which is 8% more than in the previous year.

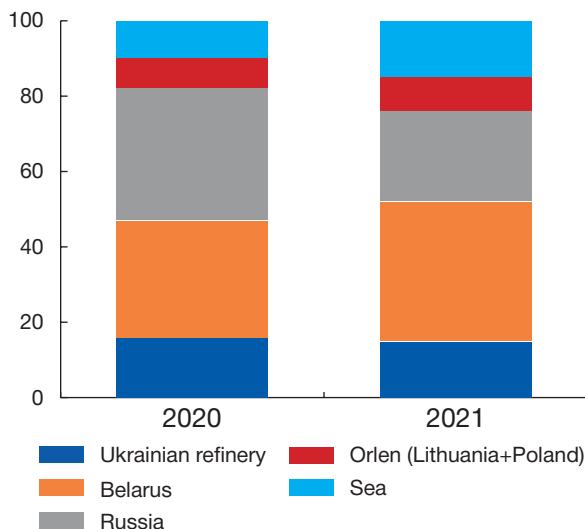
Dynamics of automobile fuel market in Ukraine, thousand tons



Balance. Import

There was a positive dynamics in the structure of diesel fuel imports. Supplies from Russia decreased to 2,05 million tons (by 22% compared to 2020) due to the diversification of supply channels from other countries. In addition, the Cabinet of Ministers of Ukraine by the Resolution dd. December 29, 2021 №1398 amended the Resolution dd. August 17, 2020 №719, which extended the special duty on imports of diesel fuel by pipeline until 31 December 2022.

Structure of diesel fuel by origin, %



Imports accounted for 85% of the total balance of diesel fuel. The largest volume of supplies was from Belarus – 2,89 million tons, which accounted for 42% of total imports. In the second half of 2021, Belarus reached record volumes of diesel fuel supplies - up to 300 thousand tons per month. There were also record deliveries by sea - 1,2 million tons. Deliveries from PKN ORLEN (Lithuania + Poland) increased.

Domestic fuel production (except for mini-refineries) remained almost at last year's level. However, it should be noted that there is a positive potential to increase domestic refining of oil and gas condensate.

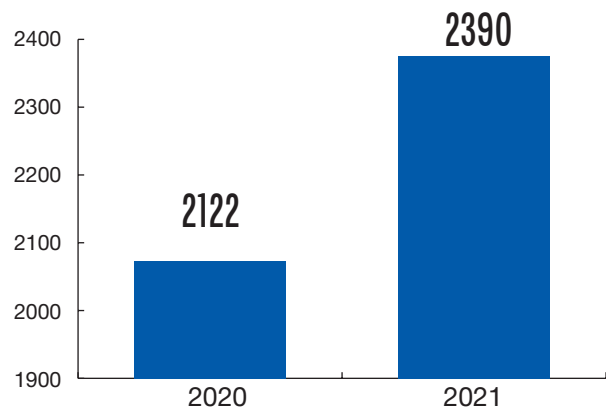
Petroleum

It should be noted that the only type of fuel that competes with imported supplies is petroleum. Over the last few years, there has been a marked decrease in petroleum consumption due to higher demand for liquefied gas. However, during the quarantine period, the vector of liquefied gas consumption has changed in another direction, the reason for this is record prices for it.

Balance. Import

The total volume of consumption in 2021 amounted to more than 2,3 million tons. Import of petroleum to Ukraine amounted to 1,28 million tons, which is 16,5% more than a year earlier (1,099 million tons). In 2021, Belarusian refineries increased gasoline shipments

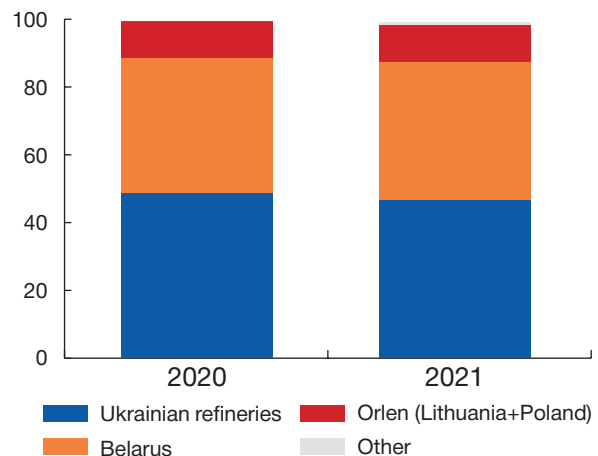
Volume of petroleum consumption, th. t.



by 17% (146,5 thousand tons) to 1 million tons, thus maintaining their share in petroleum imports at last year's level - 78%.

According to the results of the reporting year, OKKO and WOG were the largest suppliers of Belarusian petroleum. Deliveries from Lithuania in the reporting

Petroleum structure by origin, %



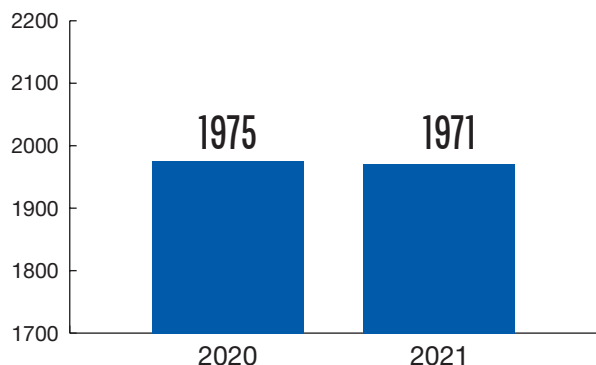
year 2021 increased by 10% to 262 thousand tons, which allowed to keep 21% - in the share of petroleum imports to the Ukrainian market. The main suppliers were WOG, OKKO and Sokar Ukraine, which imported 69 thousand tons, 51 thousand tons and 45 thousand tons, respectively. Amik Ukraine supplied 32,000 tons of ORLEN gasoline.

Product production in the country remained at last year's level: 1,04 million tons. The unexpected increase in consumption, which has all the prerequisites for continuation, was good news for Ukrainian refineries.

Liquefied gas

In 2021, the liquefied gas market was at record prices. Gas consumption by road decreased for the first time since 2012, but the opposite trend was observed by agricultural and industrial enterprises. Thus, consumption remained at 1,971 million tons.

Volume of LPG consumption in Ukraine in 2020-2021, mln. t.



Balance. Import

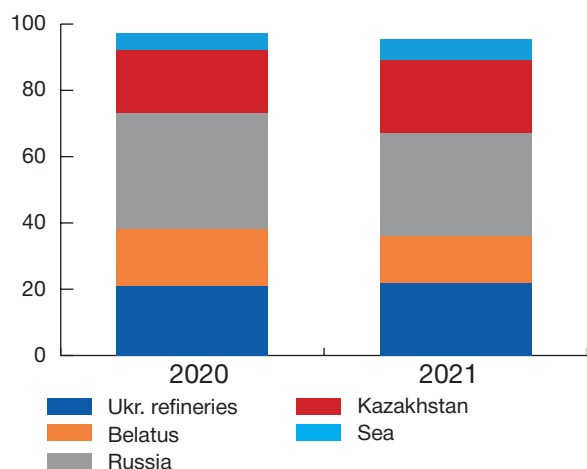
LPG demand coverage is dominated by import, which accounted for 78% of LPG supplies. LPG imports in 2021 is almost unchanged and amounted 1,62 million tons (+0,3%). Minus gas for further processing in Ukraine - raw materials for Karpatneftekhim LLC and Ukgasvydubuvannya JSC, LPG imports in 2021 decreased by 27,3 thousand tons, to 1,536 million tons (-1,8%).

Russia remains the largest LPG supplier – 595 th. tons, Kazakhstan – 442 th. t, and Belarusian factories – 256 th. t.

However have to be mentioned, that the share of Russian resource decreased. Supplies from Belarus have also declined due to a shortage of resources and sanctions from the EU and the US. Also in 2021, the supply of autogas to seaports increased by 28% to 111 thousand tons. In 2021, more than a hundred companies imported liquefied gas.

The largest of them are the trader of Lukoil refinery production, the Grand Pri Oil group of companies - 176 thousand tons, Nadiya - 169 thousand tons, and the operator of BRSM-Nafta gas station - 131 thousand tons, trader Euromin Energy - 113 thousand tons, WOG - 98 thousand tons.

LPG structure by origin, %



The production of liquefied gas in Ukraine in 2021 increased by 6,5% to 435 thousand tons. The largest producer is the state company JSC Ukgasvydobuvannya, which holds 40% of the market. Other producers are Kremenchug refinery, structures of Ukrnafta. The market

impact of small private mining companies is insignificant, although they are increasing production.

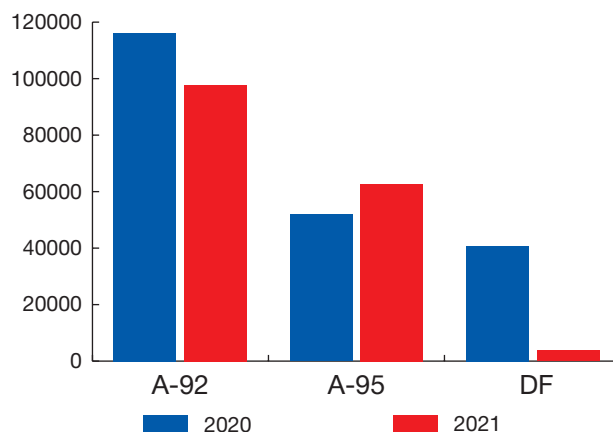
UEEX

Oil products (Petroleum, diesel fuel)

The total volume of petroleum and diesel fuel sales at UEEX LLC for 2021 was 164,61 thousand tons, that is for 22,32% less than for the 2020.

Petroleum's trades volumes in 2021 was 160,48 thousand tons. Compared to 2020 A-95 petroleum sales volumes increased to 20,46%, regarding petroleum A-92 there was a decline in sales by 15,78%. The weighted average annual price of A-95 gasoline according to the results of the auction was 32908,33 UAH/t. and 31940,38 UAH/t. petroleum A-92 (except for sales using differentials).

Sales of petroleum and diesel fuel at UEEX, tons.



Based on the results of open trading, the exchange quotes of UEEX LLC are published in the public domain, which are recognized by the Ministry of Economy as a guide in calculating the price of oil products and fuel for public procurement.

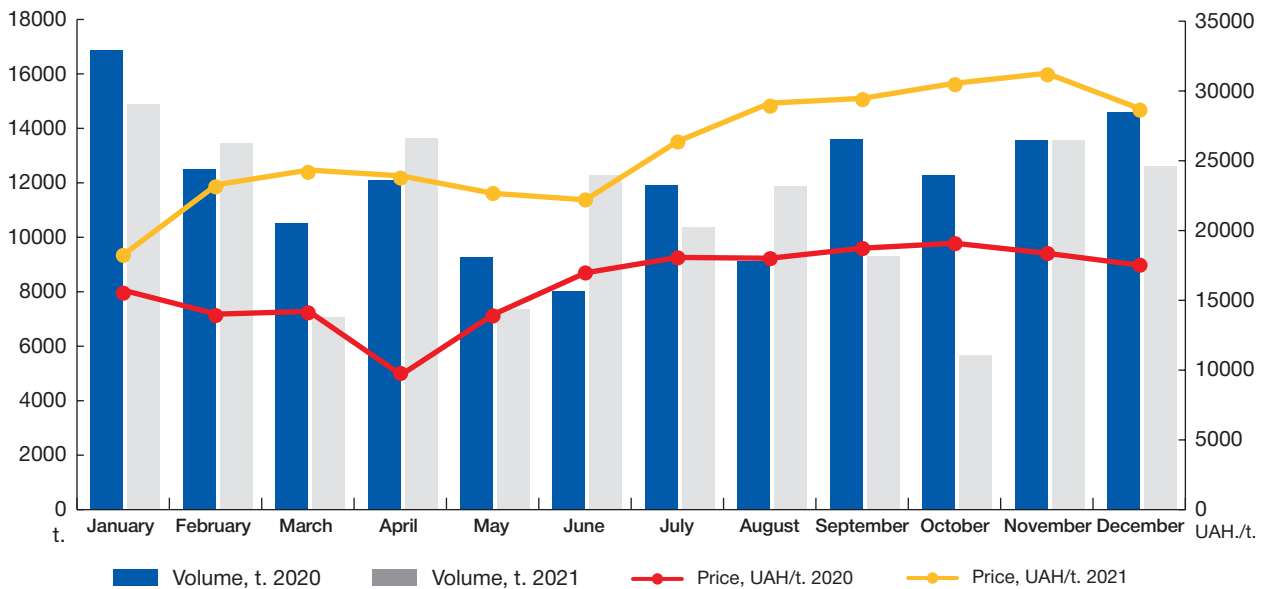
Prices according to the results of trading in diesel fuel were subject to fluctuations in the range: 24,900 - 32,700 UAH / t. Volumes of oil products for the sale within the year using differentials were also sold. Thus, last year 156,44 thousand tons of oil products (petroleum, diesel) with supplies during 2021 and 2022 were sold.

Liquefied gas

The sale of liquefied gas of own production by state enterprises in Ukraine is carried out in accordance with the Procedure for organizing and conducting exchange auctions for crude oil, gas condensate of own production and liquefied gas, approved by the Cabinet of Ministers of October 16, 2014 № 570.

In total, 131,708 tons of liquefied gas worth UAH 3,36 billion were sold at UEEX in 2021 including VAT. Weighted average prices ranged from UAH 18311,33 to UAH 31140,39 per ton. (including VAT). During the reporting year, the largest volume of trades fell on January. The highest price was recorded in November.

Weighted average prices and sales volumes for 2021, (including VAT)



BITUMEN OIL REFINING PRODUCTS

Global bitumen market

The world bitumen market shows an annual growth of about 4%, and its volume at the end of 2021 is estimated at about 125 million tons against 120 million tons in 2020.

The bitumen market has experienced temporary difficulties due to disruption of logistics chains against the background of quarantine measures in different countries. The beginning of the road construction season in 2021 and the opening of borders stimulated demand for dark oil products in general.

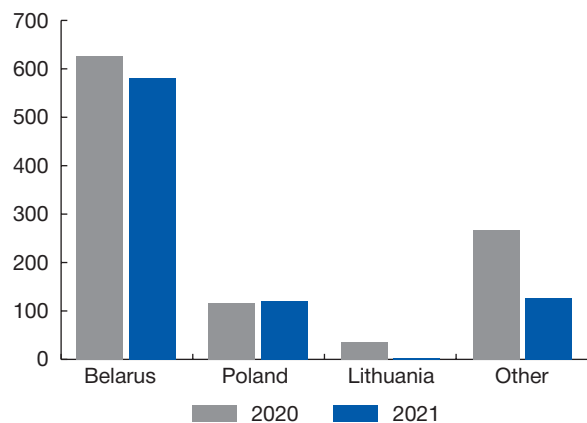
In 2021, the main consumer of bituminous materials remains the road industry - the main driver of the bitumen market.

In 2021, there was no shortage of bitumen in any of the major European markets, and fuel oil surcharges (HSFO) were historically low, as the year was marked by plant closures and cost constraints on road projects and repairs.

The main supplier is Belarus, which last year supplied 625 thousand tons (+ 7,2% to 2020), accounted for 57% of imports to the Ukrainian market.

Poland supplied 118 thousand tons against 123 thousand tons in 2020.

The structure of the origin of imported supplies of bitumen in 2020-2021, thousand tons



Ukrainian bitumen market

As with the import of light oil products, the shortage of bitumen in 2021 was covered by imports. Increased demand for imports to cover the needs of the Large Construction program is on an upward trend.

Pricing of imported bitumen is based on European quotations (quotations of fuel oil in the ports of Rotterdam and the ports of the Mediterranean) with premiums depending on the volume.

According to the results of the year, the import supply amounted to 1,098 million tons (77,3% of the total market volume) against 860,2 thousand tons in 2020 (72,4% of the total market volume).

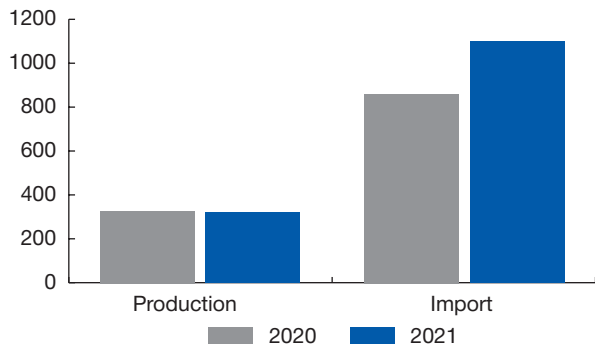
Lithuania delivered 38 thousand tons against 1 thousand tons in 2020. Revenues from other countries, such as Italy, Azerbaijan and Greece amounted to 267,9 thousand tons in 2021, which is 48% more than last year (128%) thousand tons).

From 2020, bitumen is not exported.

The leaders of the bitumen market of Ukraine are trading companies Cantarell Ukraine LLC, Alliance Energo Trade LLC, Bitex LLC, Terminal-MK LLC and Arstak LLC, which ensure stability of supply. Record premiums from suppliers have led to the fact that bitumen prices in Ukraine are among the highest in Europe.

The total market balance in 2021 amounted to 1,42 million tons, against 1,1884 million tons for 2020.

The volume of bitumen sale at UEEX in 2020-2021, t.



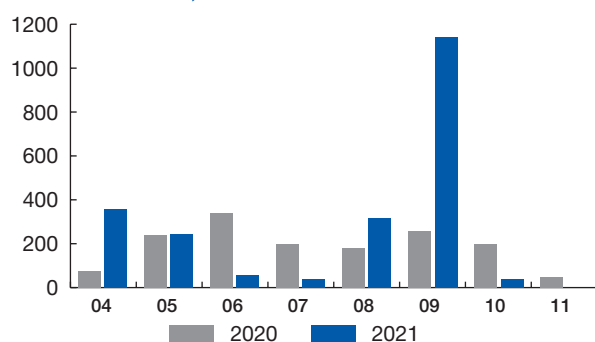
There are several companies in Ukraine that produce road bitumen. Kremenchug Refinery is the main producer of bitumen products, among others the Ukrigasvydobuvannya JSC at the Orokhovysia field in western Ukraine, as well as the private producer LLC Kirovohrad Oil Company (part of the Hals-K group of companies). In 2021, domestic producers produced 322 thousand tons of bitumen (22,7% of the total market) against 329,7 thousand tons in 2020 (27,7% of the total market). The direct dependence of the reduction of bitumen production on the increase in fuel oil production at abnormally high natural gas prices has led to higher economic efficiency of fuel oil sales compared to bitumen and led to a reduction in the production of the latter.

Production of Kremenchug Refinery PJSC of Ukratnafta decreased to 300 thousand tons and amounted to about 22,5% of the total balance of the Ukrainian bitumen market against 27,8% in 2020, which amounted to 330,0 thousand tons. Ukrigasvydobuvannya produced 3,000 tons and Kirovohrad Oil Company LLC reduced production to 19 000 tons.

Bitumen trading at UEEX

During 2021, 1,55 thousand tons of bitumen were sold at UEEX. During the year, 29 trading sessions were held. The main participant was JSC Ukrigasvydobuvannya.

The volume of bitumen sale at UEEX in 2020-2021, t.



The weighted average annual price of road bitumen increased by 30% compared to 2020 and amounted to UAH 13 791,33 / t. At the end of the year, together with the end of the season, bitumen became more expensive: in November 2021 the weighted average price was 17050 UAH / t.

OTHER OIL REFINING

In 2021, Ukraine reduced exports of refined products by 11,8% to 257,2 thousand tons, against 291,6 thousand tons in 2020.

The largest position in refined products is fuel oil. Like bitumen, it is a product of seasonal demand, so the main sales fell on the autumn-winter period. Last year, almost the only producer of this product was PJSC Ukratnafta (Kremenchug Refinery), when JSC Ukrigasvydobuvannya produced only 42,996 tons in 2021.

The price of fuel oil according to the trading results at UEEX (excluding trading in differentials) during the year had traditional seasonal fluctuations and since the beginning of the year increased by 16-19% depending on the type of fuel oil. Under the influence of global requirements for IMO 2020 fuel oil, the value of fuel oil with a sulfur content of up to 1% remains more cost-effective for energy companies on the background of high natural gas prices.

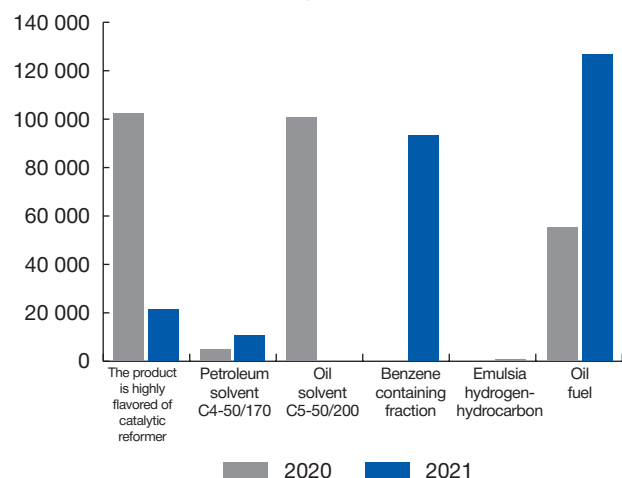
In 2021, the products of the main manufacturing enterprises were presented at UEEX: Kirovograd Oil Company LLC, Ukratnafta PJSC and Ukrigasvydobuvannya JSC. Sales took place both for export and for the needs of the domestic market.

According to the results of the year, 129,1 thousand tons of fuel oil were exported, of which 11,4 thousand tons produced by JSC Ukrigasvydobuvannya and 114,7 thousand tons of fuel oil were produced by PJSC Ukratnafta.

The market leaders are trading companies Alliance Energo Trade, Sunrise Logistics LLC, Cantarell Ukraine LLC.

During 2021, UEEX sold 55,3 thousand tons of fuel oil, which exceeds last year's figure by more than 50%.

Sales volume of other oil refinery products at UEEX in 2020 - 2021, tons



In addition, in 2021 sales of other oil refined products increased by 39% to 208,1 thousand tons, the vast majority of sales fell on the second half of 2021. During the year, 22 trading sessions were held using differentials.



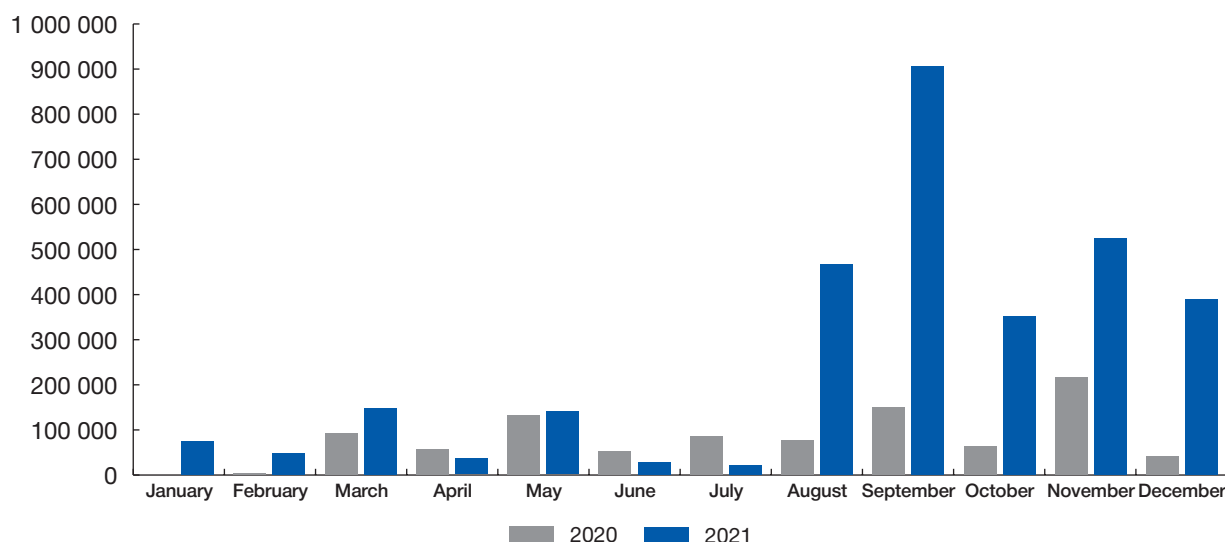
UNTREATED TIMBER

Last year, the untreated timber market was innovated. In July 2021, changes in the legislation came into force, which set new high standards for trade in untreated timber on commodity exchanges. According to these changes, state forestries have switched to selling the resource exclusively on

meters of firewood timber. The total volume of sold untreated timber in 2021 amounted to 3,14 million cubic meters.

In total, 682 auctions were held at UEEX in the direction of «Untreated timber». With the sale of more than 90% of the exhibited goods, the value of

Untreated timber sales volumes at UEEX, cubic meters



licensed exchanges. According to the results of the auction since July, 2,7 million cubic meters of untreated timber were sold, including 1,5 million cubic meters - round timber, and 1,2 million cubic

all timber sold in 2021 amounted to UAH 8,65 billion, of which forestries managed to obtain about UAH 2 billion of additional income when counting on the starting price.

UEEX trades results from July 1 to December 31, 2021

3 946

Number of participants

365

Number of sellers

2,91 mln. c.m.

Exhibited volume

2,66 mln. c.m. (91%)

Sold volume

7,91 bln. UAH

Sales value

1,76 bln. UAH

Additional income

602%

Maximum price increase

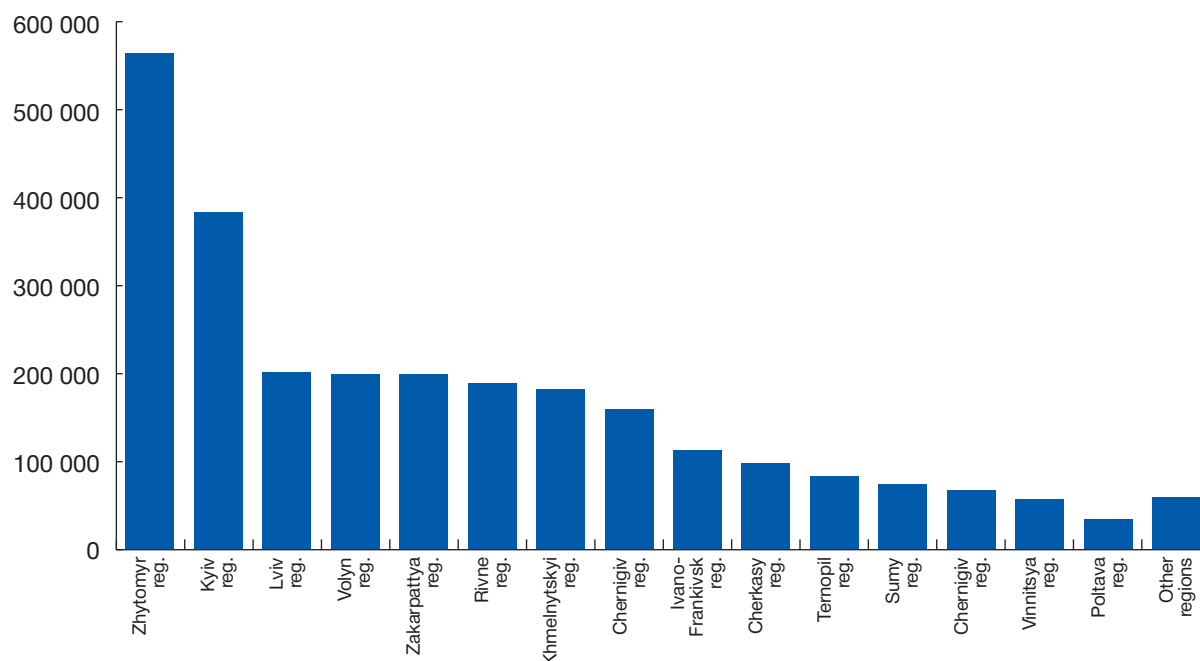
7,91 bln. UAH

Average price increase

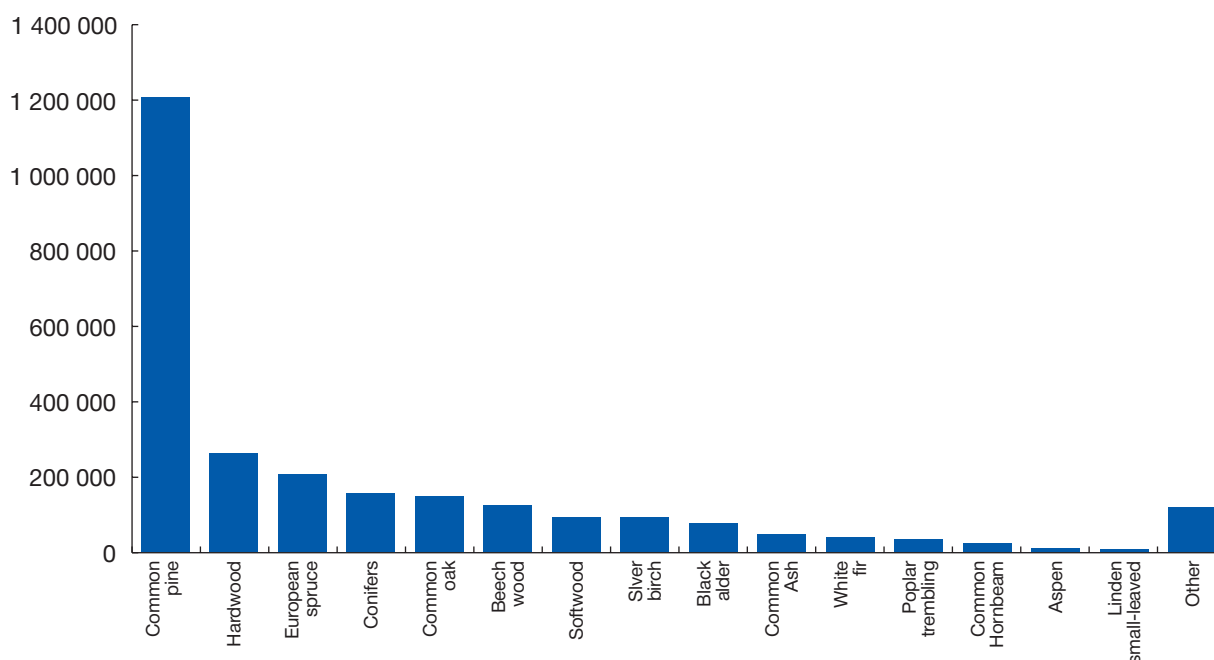
The excitement for certain species of round timber affected the price increase by more than 600% relative

quality classes and diameter groups were grouped by similar parameters.

The structure of sales by region, cubic meters



The structure of sales by breed, cubic meters



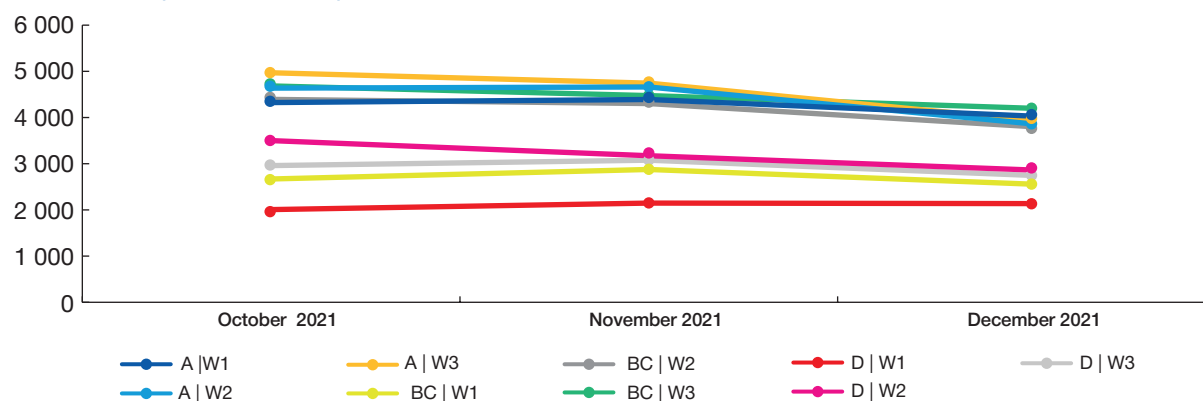
to the starting price. The overall growth rate for the year reached 35%.

In 2021, Ukrainian Energy Exchange LLC developed price indices for untreated timber, creating the first national reliable benchmark in Ukraine. Price indicators are calculated for round timber of the largest sales in accordance with the quality class and group of diameters. For easy display of untreated timber prices,

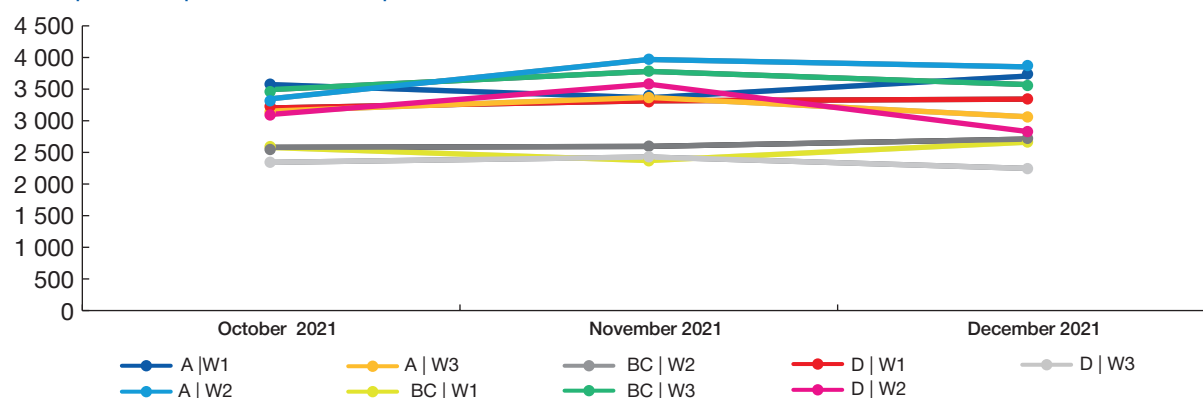
Thus, quality classes C and B are grouped into one quality class «BC», and grouped diameters W1, W2 and W3 are determined by groups of values «10-19 cm», «20-39 cm» and «40 and more cm», respectively.

Price indices for untreated timber are taking into account the prices of both concluded agreements and executed exchange certificates. This makes the price index even more relevant for the Ukrainian market.

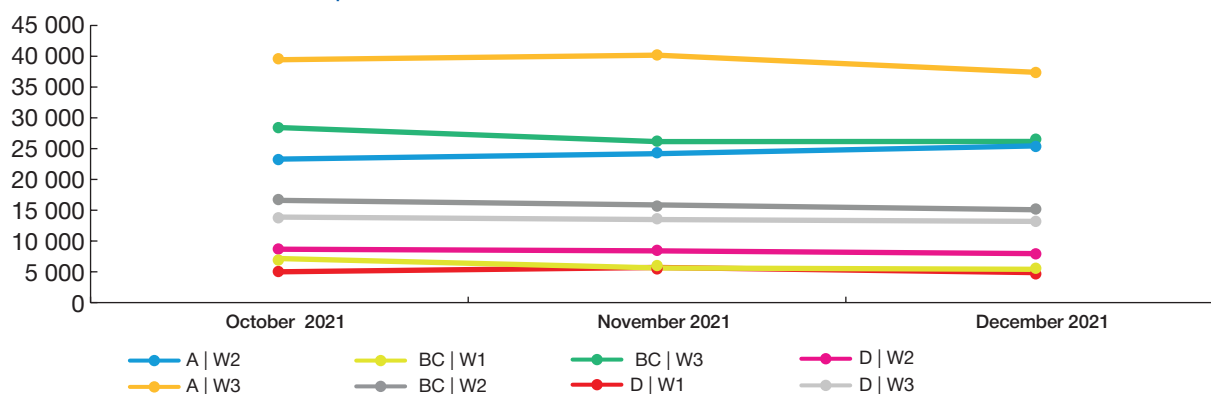
Common pine, UAH per cubic meter



European spruce, UAH per cubic meter



Common oak, UAH per cubic meter



In order to prevent market monopolization, the Ukrainian Energy Exchange has introduced a partnership program for organizers of trades of untreated timber, which has confidence in the market and is ready to comply with new rules of organization. This model of trades conduction is similar to the system of cooperation of Prozorro with accredited platforms.

Among other things, during 2021 UEEX developed a new trading system, using the knowledge and experience of world exchange trading, as well as on the basis of six months of active work with the timber

market. In developing the trading system, UEEX meticulously and attentively listened to the needs and wishes of market participants in order to implement the best exchange standards.

The new system provides a separate type of trade in untreated timber - trades with the use of the coefficient, i.e. the prices at such auctions will be tied to the price indices for untreated timber in Ukrainian or foreign markets. This product is designed to trade with the longer delivery terms, namely annual, semi-annual, etc., with hedging of its own portfolio from market risks.



prozorro продажі

PROZORRO.SALE

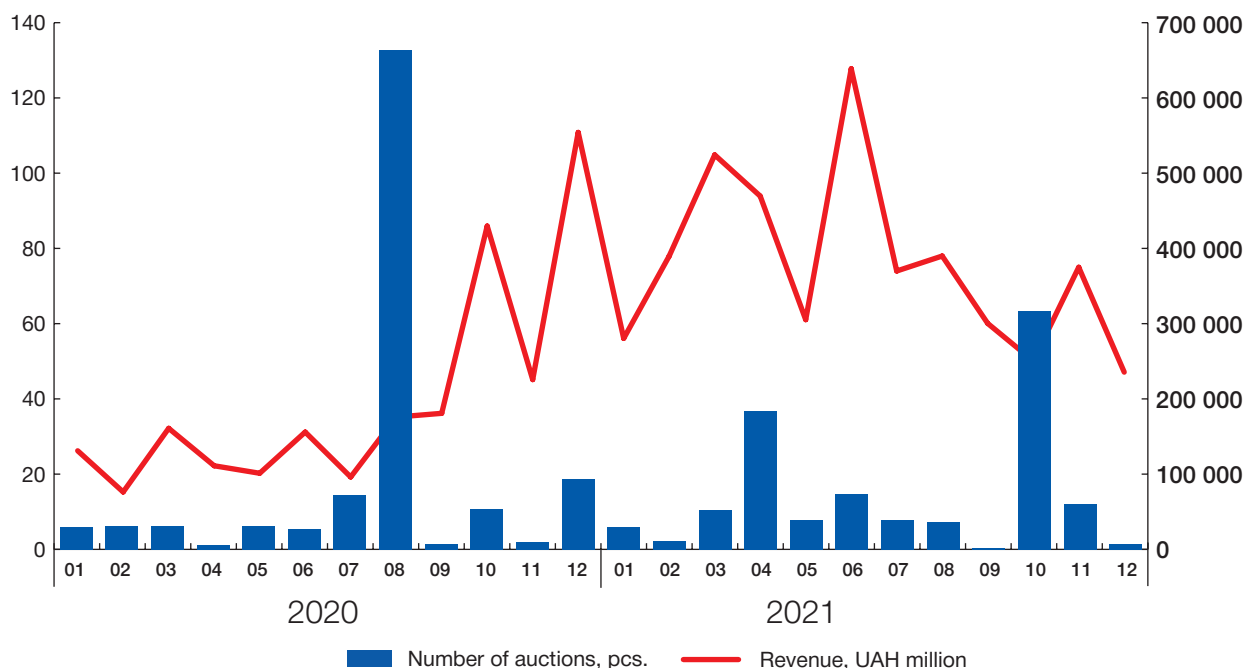
Auctions are held in accordance with current regulations approved by orders of Prozorro.Sale (posted on the page <https://sale.ueex.com.ua/reglament.aspx>), as well as in accordance with other regulations, including the Law «On privatization of state and municipal property», RCMU «On the implementation of pilot project on the introduction of auctions for the sale of special permits for subsoil use through electronic trading», etc. In terms of revenue, UEEX LLC is one of the top 5 platforms where offers were sold.

amount of revenue UAH 1,07 billion.

Last year, the largest volume of sales was formed by the direction «Special permits for subsoil use». Then, the second position was taken by the direction of «untreated timber».

Last year was marked by the launch of the market for lease and sale of state and municipal land through the system «Prozorro.Sale». Since the entry into force of Governmental Resolution №1013 in November 2021, 8 winning auctions worth UAH 3,6 millions have been held through UEEX Prozorro.Sale

Sales of UEEX LLC platform in Prozorro system, 2020-2021



In 2021, UEEX conducted 1,15 thousand auctions through its own electronic platform Prozorro.Sale, of which 398 auctions were winning. 224 winners were recognized at the auction, which generated an annual income of UAH 930,86 millions. The cost of the most expensive contract amounted to over UAH 304,00 millions.

For comparison, in 2020, 417 auctions were held and 129 winning participants were selected, with the

on its own electronic platform.

In the future, it is planned to launch auctions, together with SETAM SE, for the sale of seized property of the State Enforcement Service, which should be integrated into the Prozorro.Sale system as a designated administrator of the electronic trading system in accordance with the Order №2933/5 of the Ministry of Justice.

TRANSPARENCY AND REPORTING

Law 38738-IX stipulates that the NSSMC will carry out state regulation of capital markets and organized commodity markets (commodity exchanges). In addition, other state authorities may be involved to the regulation of commodity exchanges in cases established by law, namely: regulators of the relevant commodity market and central executive bodies, which ensures the formation and implementation of state policy in relevant areas, NEURC and AMCU.

Reporting to NSSMC



Commodity Exchange is obliged to disclose and submit information to the NSSMC in accordance with Part 1 of Article 13 of the Law of Ukraine "On Commodity Exchanges" and Article 57 of Section V of the Law of Ukraine №738-IX, which, in particular,

stipulates that the NSSMC establishes the procedure and forms of presenting information. Accordingly, the NSSMC will decide at the beginning of the next year to approve the Regulations on the procedure for compiling, submitting and publishing reporting data by commodity exchanges.

This provision will oblige the Commodity Exchange to submit data to the NSSMC in electronic form (approximately from May 2022) and in the established format of daily, monthly, annual and irregular data. UEEX has started developing software for submitting reporting information to the NSSMC.

However, the License Terms to the Procedure of conduction of professional activity in organized commodity markets contains a number of requirements, including to the transparency of the exchange's activity, to which the exchange must comply during the entire term of the license activity. Other normative documents of the NSSMC governing the activities of the exchange are the Decision of the NSSMC «On approval of the Regulations on conducting activities on the organization of trade in products on commodity exchanges», Decision of the NSSMC «On approval of the Regulations on clearing activities», Decision of the NSSMC «On approval of the Regulations on financial monitoring by primary entities financial monitoring, state regulation and supervision of which is carried out by the NSSMC» etc.

Reporting to NEURC



A number of Bills have been developed for the implementation of REMIT in Ukraine (№№ 4503, 4503-1, 4503-d, 5322, 5322-1).

The NEURC notes that it is preparing for the implementation of the REMIT Regulations, and relevant plans should be

made public by the end of the year: a roadmap for the implementation of REMIT under the Bill 5322 has already been developed with the Ministry of Energy and is expected to be adopted. After Ukraine's implementation of REMIT requirements, UEEX will fulfill the obligations which are imposed to traders on a professional basis and (PPATs). According to the specifics of the functioning of the PPAT, the requirements of REMIT are applied in terms of making PPAT responsible for monitoring and promoting the integrity, transparency and ensuring the proper functioning of the wholesale energy market.

UEEX together with NEURC signed a Memorandum on promotion of effective development of electricity market and natural gas market, cooperation on informational collaboration for effective development and transparency of electricity and natural gas markets. This cooperation allows consolidating efforts in order to implement European standards in the Ukrainian energy market. UEEX also gave access for the Regulator to the System of Bilateral Electricity Contracts Market Analysis in accordance with the requirements of Article 20 of the Law of Ukraine «On the National Commission carrying out state regulation in the energy and utilities sector» and Article 6 of the Law of Ukraine «On Electricity Market».

Reporting to the Ministry of energy of Ukraine



**Міністерство
енергетики
України**

Ukrainian Energy Exchange provides information to the Ministry of

Energy of Ukraine on transactions of purchase and sale of electricity under bilateral contracts to monitor the market of bilateral contracts on a weekly basis.

Reporting to the auction Committee

Paragraph 6 of part 2. Article 66 of the Law of Ukraine «On the Electricity Market» establishes the obligation of state producers to sell electricity at electronic auctions under bilateral contracts, the procedure for which is approved by the Cabinet of Ministers of Ukraine. Private producers sell electricity at such auctions from September 1, 2021.

It should be noted that the mechanism of electronic auctions is built to ensure compliance with its main principles, namely:

- fair competition (including by establishing by the seller the number of lots offered for sale simultaneously in total volume, which will allow to attract the largest possible number of potential buyers);

- non-discrimination of the auction participants;
- objectivity and impartiality;
- anonymity (depersonalization) of auction participants - buyers in order to minimize the risk of anticompetitive concerted behavior between bidders;

- prevention of corrupt actions and abuse;
- conducting auctions only on business days;
- pricing in order to comply with market pricing principles, which, in particular, are stipulated by the Law of Ukraine «On the Electricity Market», except for the cases stipulated by clause 5 of the Procedure.

The Ukrainian Energy Exchange ensures full transparency of such electronic auctions by publishing all information on the course and results of trading, which is determined by the Procedure. Daily reports on electricity auctions are provided to the members of the Exchange's Auction Committee. UEEX cooperates with all regulatory authorities to assist in identifying possible facts of unfair competition.

Over the course of the auctions, the state regulation and the Auction Committee have changed the conditions and requirements for auctions many times, requiring significant technical reconfiguration of the electronic trading system operation, which has been ensured by the UEEX without delay in implementation. Among other things, a number of technical solutions were introduced to improve bidding mechanisms and meet the needs of market participants for the efficient operation of the electricity market. There have never been any complaints against the Ukrainian Energy Exchange about violations of the Auction Procedure or Regulations.

Placement of information about tenders and auctions

December 2021

Mo	Tu	We	Th	Fr	Sa	Su
		1 ¹¹	2 ¹²	3 ⁹	4	5
6 ¹⁴	7 ¹³	8 ¹²	9 ¹⁴	10 ⁹	11	12
13 ¹⁶	14 ¹⁷	15 ¹⁴	16 ¹³	17 ⁸	18	19
20 ¹⁸	21 ²¹	22 ¹⁴	23 ¹⁶	24 ⁹	25	26
27	28 ¹³	29 ¹⁸	30 ⁹	31		

The Exchange posts information about trades in different areas. The information can be viewed independently by selecting the Trading Calendar and the desired date. The user will be able to view the Exchange/Auction Bulletin, where all the information on the auction (seller, commodity, starting price, volume, etc.) is indicated. After the end of the auction the weighted average price bulletin is displayed, where sold volume, minimum, maximum and weighted average price are indicated.

UEEX Quotation

Дата аукциона	Период поставки		Тип графика		Тип аукциона		Торговая зона				X
Номер аукциона	Тип аукциона	Вид лота	Торговая зона	Период поставки	График поставки	Количество лота	Реализованный объем, МВт·ч	Средневзвешенная цена/лотовый, грн./МВт·ч	Минимальная цена/лотовый, грн./МВт·ч	Максимальная цена/лотовый, грн./МВт·ч	
EP-170022-20	Специальный лот в торгах по электрической энергии, произведенной в электростанциях донецкого сектора	Поставка	UEC Украины	01.04.2022 – 01.04.2022	8-9, ет. дн	12	240	2 500,00	2 500,0000	2 500,0000	
		Поставка	UEC Украины	01.04.2022 – 01.04.2022	10-11, ет. дн	12	240	2 500,00	2 500,0000	2 500,0000	
		Поставка	UEC Украины	01.04.2022 – 01.04.2022	12-13, ет. дн	12	240	2 500,00	2 500,0000	2 500,0000	
		Поставка	UEC Украины	01.04.2022 – 01.04.2022	14-15, ет. дн	12	240	2 500,00	2 500,0000	2 500,0000	
		Поставка	UEC Украины	01.04.2022 – 01.04.2022	16-17, ет. дн	12	240	2 500,00	2 500,0000	2 500,0000	

Authorities, regulatory and human rights bodies, regulators, ministries and establishments, mass media, etc. use UEEX quotations and other exchange information. The Exchange fruitfully cooperates with Ukrainian authorities and regulators because, among other things, it has become an effective tool for them to build a competitive market, ensure transparency, overcome corruption and improve economic performance of companies in the industry. Exchange quotations of UEEX have become recognized by the authorities and demanded by the market, they are published by domestic and international price agencies. The Ministry of Economy recommended to use quotations of UEEX LLC as a benchmark when revising prices in contracts for public purchases of natural gas and oil products (Recommendations No. 3304-04/698-06 of 08.01.2020 and No. 3304-04/54265-06 dd. 11.12.2018) to resolve negative price situations with purchases.

UEEX LLC has developed and started publishing a monthly base-load electricity price index. In particular, the NEURC developed a resolution «On Approval of Amendments to the Procedure for Formation of Prices for Universal Services», according to which it is proposed to include UEEX LLC prices in the price of universal services when calculating the price of electricity purchase.

UEEX PLANS FOR 2022



Further adaptation of all business processes, respectively, regulation, implemented by the NSSMC.



Increasing the liquidity of the short-term gas market.



Launch of futures in the areas of «Electricity» and «Natural gas». Subsequent standardization and unification of products.



Promoting the established standards of transparency and accountability of the Ukrainian energy market.



Establishment of full-fledged clearing and risk management.



Enhancement of international integration in the natural gas market, including through the SEEGAS project. Enabling cross-border trade in natural gas at the UEEX.



Transition to natural gas trading in MW and without VAT.



Organization of auctions for the export of electricity to European countries.

Opportunities of new markets



Renewable Energy Market (RES)

- Guarantees of origin
- Greenhouse gas emissions (CO₂)
- Hydrogen energy (H₂)



Agricultural products

Ukraine exported 56,7 million tons of grain and leguminous crops in 2020 (or about 40% of exports) and ranked second in the world for total grain exports according to the Ministry of Agrarian Policy and Food of Ukraine.



Solid biofuels

In Ukraine, 34 million tons of biofuel can be used annually in the energy sector. More than 2,4 GW from biomass have already been put into operation. The potential to replace natural gas from agricultural waste is 9,3 billion m³ per year.

UKRAINIAN
ENERGY EXCHANGE



УКРАЇНСЬКА
ЕНЕРГЕТИЧНА БІРЖА



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