



ANNUAL REPORT

2021: The Market Operator
becomes a Joint-stock
company



**MARKET
OPERATOR**

/EQUILIBRIUM ENERGY/

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Dear colleagues, friends!

The day of December 20, 2021 became a significant one for the Market Operator, when the Minister of Energy of Ukraine German Galushchenko signed a decree on the state company Market Operator transformation into a joint-stock company, where 100% of shares belongs to the state and is not subject to privatization.

This is a landmark event on the electricity market of Ukraine, which opens up many new opportunities for the Market Operator development. First of all, corporatization is the introduction of a transparent corporate governance system, trade integration with European electricity market operators and implementation of new pro-European trade projects at the company's site.

My mission as a leader is to develop the potential of the Market Operator. We work as an analogue of the European exchange and are ready to assume the most daring challenges related to the Ukrainian energy sector development.

We plan to launch test clearing operations in the electricity market, which will become the basis to create such a financial services segment in Ukraine that is provided by both state and private companies. To obtain a license for professional activities in the capital markets, as a commodity exchange from the National Securities and Stock Market Commission will become a logically complement.

The Market Operator has established itself perfectly over two and a half years of its operation. Business considers that our main advantages are the transparent work 24/7, operative daily electricity settlements, market pricing, high-quality communication and detailed analytics of the DAM and IDM functioning. We are ready to offer even more for market participants. And the Law №3508-d has provided us with such opportunities.

Wish us success. Together we can do a lot.

Sincerely - Oleksandr HAVVA



MANAGEMENT AND BUSINESS PROCESSES

Joint-stock company Market Operator is an analogue of the European Power Exchange, responsible for electricity trades on the day-ahead market and the intraday market in Ukraine.

DAM the purchase and sale of electricity are carried out the next day after the trading one. The price on this market segment is determined by the marginal pricing principle with price minimization and trade volumes maximization providing. None of the participants sees the prices and electricity purchase / sale volumes, declared by other participants. This trading technology on DAM promotes the competition development.

IDM *the purchase and sale of electricity are carried out continuously after the end of trades on the day-ahead market and during the day of electricity physical supply. This market segment allows market participants to adjust their trading positions and works on the principle of "every product has its buyer". That is, sellers and purchasers declare the volume and prices, which they want to sell / purchase electricity, and wait for their counterparty.*

Market Operator works transparently, 24/7 in a compliance with principles of free pricing and makes 100% of settlement payments daily between those who sold and those who bought electricity that excludes the debts arising on these new energy market segments.

Market Operator is the first and the only company among energy ones to implement and make payments through the ESCROW accounts. And we are the first who have a payment system working on weekends.

All business processes of the Market Operator are carried out automatically, that excludes any misuse during the electricity purchase and sale, and provides equal conditions for all companies participating in the trading procedure. The help desk system, based on HESK software solution is used to support prompt feedback with market participants. With the help of this system the Market Operator reviews appeals and promptly responds to the issues that may arise during the trades.

The Market Operator has built mutual partnership with both electricity sellers and buyers, which is expressed in the willingness to assist 24/7, timely and full payment and all documents issuance , as well as its tax liabilities registration.

UAH 212,4 million
taxes and fees

UAH 16,6 billion
tax liabilities

PAID TO
BUDGETS OF
VARIOUS LEVELS

Zero tolerance towards corruption

Market Operator works on the Anti-Corruption Program and the Anti-Corruption Policy basis. Strict adherence of ethical behavior by all employees of the company contributes to high-quality functionality, enhances reputation and avoids potential risks of bribery, engaging in corrupt practices, which could damage the reputation, as well as to lead to the confidence loss in the Market Operator. Company received an international certificate on the anti-corruption management system compliance with the requirements of ISO 37001 in 2021.

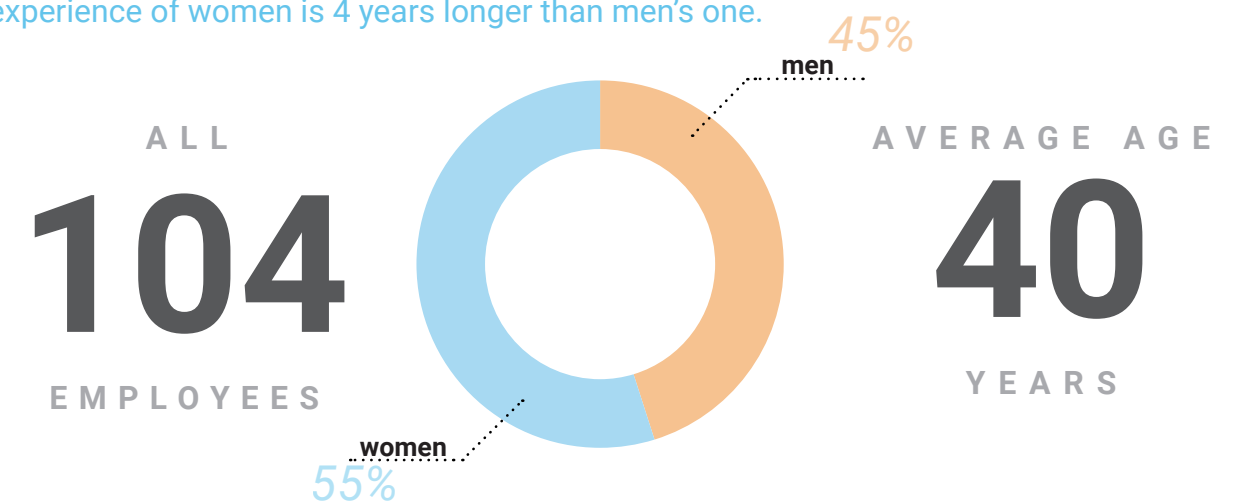
Social responsibility

We profess the principles of good corporate governance and try to provide the best working conditions for employees, their development and potential realisation. We constantly attract new staff. In its relations with the workforce the Market Operator is governed by a collective agreement, which is the result of social partnership at the local level.

PORTRAIT OF AN EMPLOYEE

94% of all employees have higher education, every fourth has two or more diplomas of higher economic and technical educations.

The work experience in the electrical power industry is 12 years. The average energy experience of women is 4 years longer than men's one.



The share of people with disabilities is 4% of the average number of permanent staff in the company.

Employees of the company upgrade their competencies annually to meet the requirements of the time. They were studying in 2021 and had received certificates in the following areas:

- International Financial Reporting Standards
- Accounting of professional securities market participants
- Corporate Governance
- IT-area: Cisco Certified Network Associate (CCNA), Advanced JavaScript Course, Oracle Database 12c: Advanced PL/SQL Methods, RED HAT SYSTEM ADMINISTRATION I (RH124) / Red Hat 1 RHEL7 System Administration Course
- Public procurement
- Personnel work in an electronic format
- Activities of the officers for Corruption prevention. The NACPs inspections procedure on work to prevent and detect corruption.

Investments in employees' healthcare and safety

We guarantee full health insurance and safe working conditions to the employees, which are described in the current regulations on labor protection, fire safety and civil defense of the JSC Market Operator. 100% of workers have been vaccinated against COVID-19, as well as they get a flu vaccine annually.

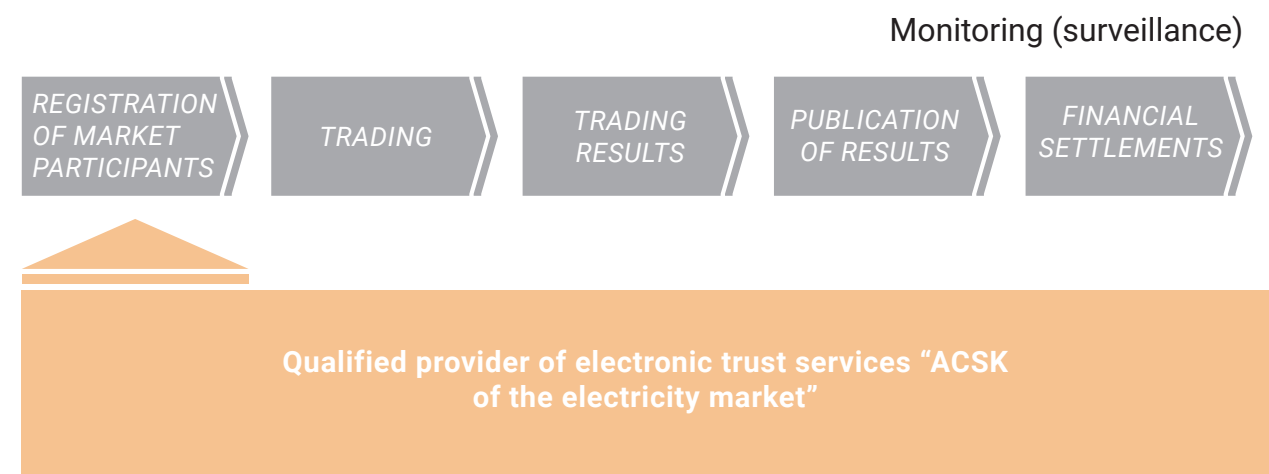
Transparency in procurement procedures

We follow the core principles of public procurement - maximum costs savings and efficiency, openness and transparency, non-discrimination of participants, objective and impartial evaluation of tender offers. Transparent procurement allows to increase the financial efficiency of the goods supply process, services provision and performance of works through competitive selection of suppliers.

Energy efficiency

We use electric cars in our work, as well as LED-ceiling panels are installed in the office.

THE MAIN BUSINESS PROCESSES OF THE MARKET OPERATOR



*The Unified information and technical complex.
High-tech, innovative equipment*



163 purchases for the total amount of UAH 37,9 million were announced for the needs of the company in the ProZorro electronic procurement system in 2021. The savings from the bidding results on ProZorro amounted to UAH 2,1 million for the Market Operator in 2021.

HIGHLIGHTS OF THE YEAR



APRIL

- presented a software complex to be used to conduct electricity trades under the bilateral contracts
- started testing flexible and associated orders for the electricity purchase and sale on the DAM
- received a positive auditors output on the financial reports for 2020
- switched to the international financial reporting standards
- received UAH 19,8 million of net income in the first quarter of 2021

MAY

- switched to the European format of the price publishing for electricity sale and purchase on the day-ahead market. DAM indices in the IPS of Ukraine and in the Burshtyn Energy Island are displayed in three time periods: BASE, PEAK, OFF-PEAK
- equated to the EPEX SPOT European exchange by volume of trades
- entered the top 20 of the largest enterprises of Ukraine (BusinessCensor rating)
- opened a "Single Window" for business - the Help Desk System HESK, which was implemented by IT specialists of the company



2021

JUNE

- The Market Operator's tariff changed since June 18 – 3,23 UAH/MWh
- On June 26, 2021, a new minimum price level began to operate on the intraday market in the Integrated Power System of Ukraine



JULY

- received an International Certificate of information security management system compliance with the requirements of the **ISO/IEC 27001:2013** standard
- the Parliament adopted the Law № 3508-d, which opened new opportunities for the Market Operator

paragraph 54 should be put as follows: «market operator - a legal entity securing the «day-ahead» and intraday markets as well as organizing electricity purchase and sale in these markets, has the right to organize and conduct electronic auctions for electricity purchase and sale under the bilateral contracts on the basis of relevant licenses issued by the National Securities and Stock Market Commission»

AUGUST

- based on the results of the first half of 2021 UAH 98,5 million of taxes, fees and obligatory payments were transferred to the budgets of all levels
- got the copyright registration for our own software complex Electricity Trading System (ETS / UA) to conduct electronic auctions for the electricity purchase and sale under bilateral contracts
- received an International Certificate on anti-bribery management system compliance with the requirements of **ISO 37001**

SEPTEMBER

- initiated changes to the DAM and IDM rules, which provide for the new commercial products introduction – flexible and associated block orders
- UAH 139,6 million of taxes, fees and obligatory payments were paid to budgets of various levels during 9 months of 2021

NOVEMBER

- received an agreed tariff to carry out operations of the electricity purchase and sale on the day-ahead market and intraday market for 2022 – 3,30 UAH/MWh (net of VAT)

DECEMBER

- Oleksandr Havva was appointed as the Acting Director General of JSC Market Operator
- the Market Operator became a Joint-stock company – the Minister of Energy of Ukraine German Galushchenko signed the Decree №344 On establishing the Joint-stock company «Market operator»
- received a positive output of the independent auditor on the DAM and IDM functioning
- the National Securities and Stock Market Commission registered the issue of ordinary registered shares of JSC Market Operator for the total amount of UAH 103,921 thousand.

THE YEAR OF DAM AND IDM

THE MAIN EMPHASIS OF
ELECTRICITY TRADING

THE MAIN INDICATORS OF DAM AND IDM FOR 2020-2021

DAY-AHEAD MARKET

INDICATOR	2020	2021	CHANGE %
Base index (IPS), UAH/MWh	1 293,72	1 802,18	+ 39,30 % ▲
Peak index (IPS), UAH/MWh	1 485,69	2 096,10	+ 41,09 % ▲
Off-peak index (IPS), UAH/MWh	1 101,68	1 508,37	+ 36,92 % ▲
Base index (BEI), UAH/MWh	1 482,72	1 753,13	+ 18,24 % ▲
Peak index (BEI), UAH/MWh	1 756,41	2 079,02	+ 18,37 % ▲
Off-peak index (BEI), UAH/MWh	1 209,11	1 427,26	+ 18,04 % ▲
DAM weighted average price, UAH/MWh	1 365,83	2 038,60	+ 49,26 % ▲
DAM weighted average price (IPS), UAH/MWh	1 341,27	2 062,95	+ 53,81 % ▲
DAM weighted average price (BEI), UAH/MWh	1 617,83	1 865,06	+ 15,28 % ▲
DAM volume of purchase and sale, MWh	36 718 329,8	35 762 125,3	- 2,60 % ▼
DAM volume of purchase and sale (IPS), MWh	33 457 699,4	31 361 730,0	- 6,26 % ▼
DAM volume of purchase and sale (BEI), MWh	3 260 630,4	4 400 395,3	+ 34,96 % ▲
DAM average daily volume of trades, MWh	100 323,3	97 978,4	- 2,34 % ▼

INTRADAY MARKET

INDICATOR	2020	2021	CHANGE %
IDM weighted average price, UAH/MWh	1 303,24	1 835,08	+ 40,81 % ▲
IDM weighted average price (IPS), UAH/MWh	1 300,09	1 834,47	+ 41,10 % ▲
IDM weighted average price (BEI), UAH/MWh	1 474,33	1 904,74	+ 29,19 % ▲
IDM volume of purchase and sale, MWh	5 994 463,5	5 058 307,0	- 15,62 % ▼
IDM volume of purchase and sale (IPS), MWh	5 886 279,1	5 014 307,4	- 14,81 % ▼
IDM volume of purchase and sale (BEI), MWh	108 184,4	43 999,6	- 59,33 % ▼
IDM average daily volume of trades, MWh	16 378,3	13 858,4	- 15,39 % ▼

PRICES

The year of 2021 was marked for the day-ahead market and the intraday market by volatility of price indices and weighted average prices of electricity in the IPS of Ukraine and also by a slight decrease in trading volumes.

The DAM base load price index of electricity in the IPS of Ukraine was 1 802,18 UAH/MWh for 2021, that was 39,3% higher than the base index price for 2020. The base load price index in Burshtyn Energy Island increased by 18,24% to 1 753,13 UAH/MWh.

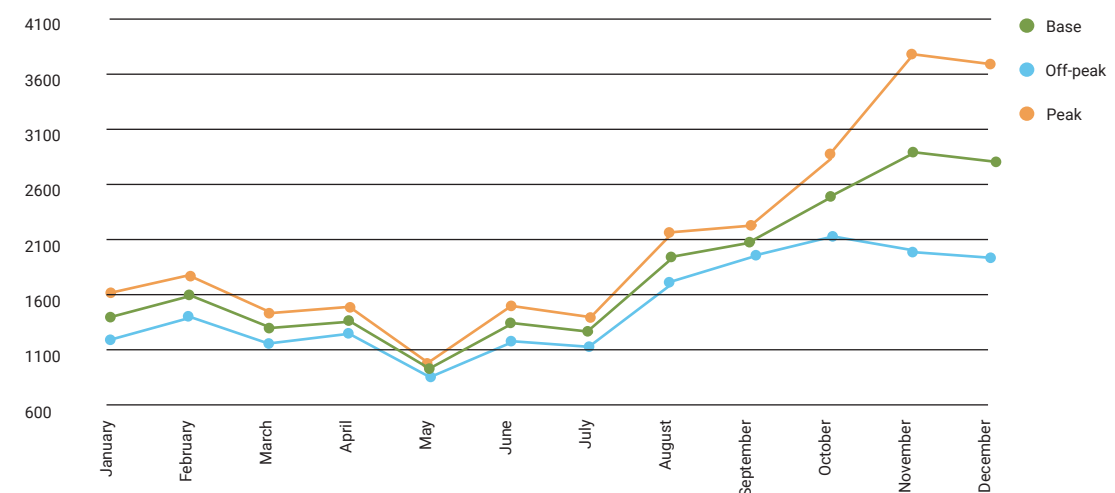
12%

DAM PRODUCTS PRICES IN 2021, UAH/MWh

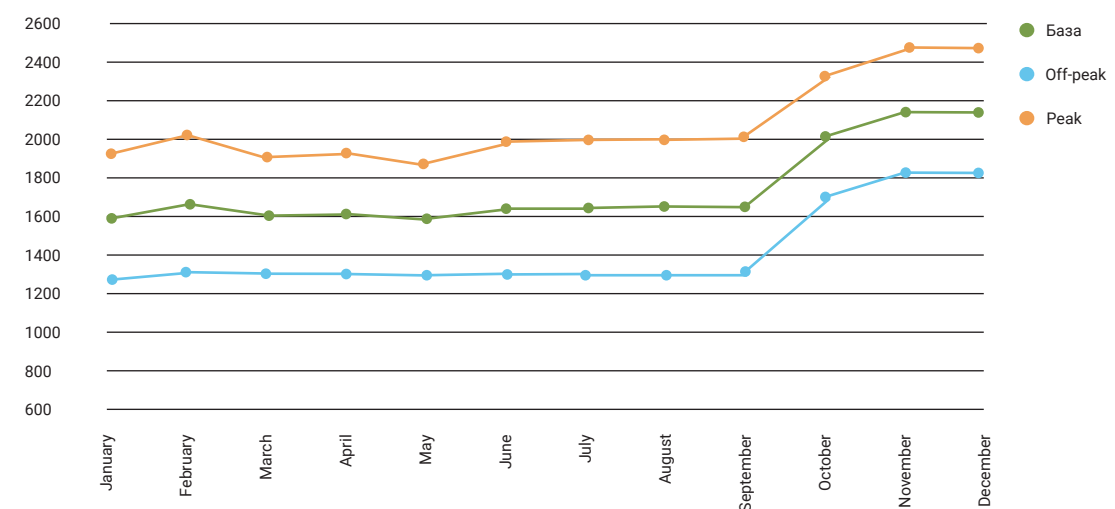
DAM INDICES	IPS TRADING ZONE		
	2021	2020	CHANGE %
Base	1 802,18	1 293,72	+ 39,3 % ▲
Peak	2 096,10	1 485,69	+ 41,1 % ▲
Off-peak	1 508,37	1 101,68	+ 36,9 % ▲

DAM INDICES	Burshtyn TPP Island (BEI) TRADING ZONE		
	2021	2020	3MIHA %
Base	1 753,13	1 482,72	+ 18,2 % ▲
Peak	2 079,02	1 756,41	+ 18,4 % ▲
Off-peak	1 427,26	1 209,11	+ 18,0 % ▲

DAM INDICES FOR 2021 (IPS)



DAM INDICES FOR 2021 (BEI)



DAM AND IDM MAXIMUM VALUES REGISTERED IN 2021

BASE INDEX PER DAY, UAH/MWh

3 220. 54 UAH/MWh (net of VAT)
IPS of Ukraine | November 2

2 166. 67 UAH/MWh (net of VAT)
Burshtyn TPP Island | November 29

WEIGHTED AVERAGE PRICE OF ELECTRICITY PURCHASE AND SALE PER DAY, UAH/MWh

3 513. 57 UAH/MWh (net of VAT)
IPS of Ukraine | December 16

2 224. 97 UAH/MWh (net of VAT)
Burshtyn TPP Island | November 29

VOLUME OF ELECTRICITY PURCHASE AND SALE PER HOUR, MWh

8 786. 0 MWh (net of VAT)
IPS of Ukraine | December 28

1 083. 7 MWh (net of VAT)
Burshtyn TPP Island | December 28

VOLUME OF ELECTRICITY PURCHASE AND SALE PER DAY, MWh

162 660. 7 MWh (net of VAT)
IPS of Ukraine | December 30

22 829. 6 MWh (net of VAT)
Burshtyn TPP Island | December 28

VOLUME OF ELECTRICITY PURCHASE AND SALE PER MONTH, MWh

4 174 012. 5 MWh (net of VAT)
IPS of Ukraine | December

658 851. 9 MWh (net of VAT)
Burshtyn TPP Island | December

AVERAGE DAILY VOLUME OF TRADES, MWh

134 645. 6 MWh (net of VAT)
IPS of Ukraine | December

21 253. 3 MWh (net of VAT)
Burshtyn TPP Island | December

WEIGHTED AVERAGE PRICE OF ELECTRICITY PURCHASE AND SALE PER DAY, UAH/MWh

3 826. 74 UAH/MWh (net of VAT)
IPS of Ukraine | November 8

2 489. 63 UAH/MWh (net of VAT)
Burshtyn TPP Island | November 25

VOLUME OF ELECTRICITY PURCHASE AND SALE PER HOUR, MWh

3 083. 4 MWh (net of VAT)
IPS of Ukraine | March 10

537. 2 MWh (net of VAT)
Burshtyn TPP Island | October 8

VOLUME OF ELECTRICITY PURCHASE AND SALE PER DAY, MWh

53 811. 1 MWh (net of VAT)
IPS of Ukraine | March 10

7 903. 9 MWh (net of VAT)
Burshtyn TPP Island | October 8

VOLUME OF ELECTRICITY PURCHASE AND SALE PER MONTH, MWh

843 248. 0 MWh (net of VAT)
IPS of Ukraine | March

13 823.7 MWh (net of VAT)
Burshtyn TPP Island | October

AVERAGE DAILY VOLUME OF TRADES, MWh

27 201. 6 MWh (net of VAT)
IPS of Ukraine | March

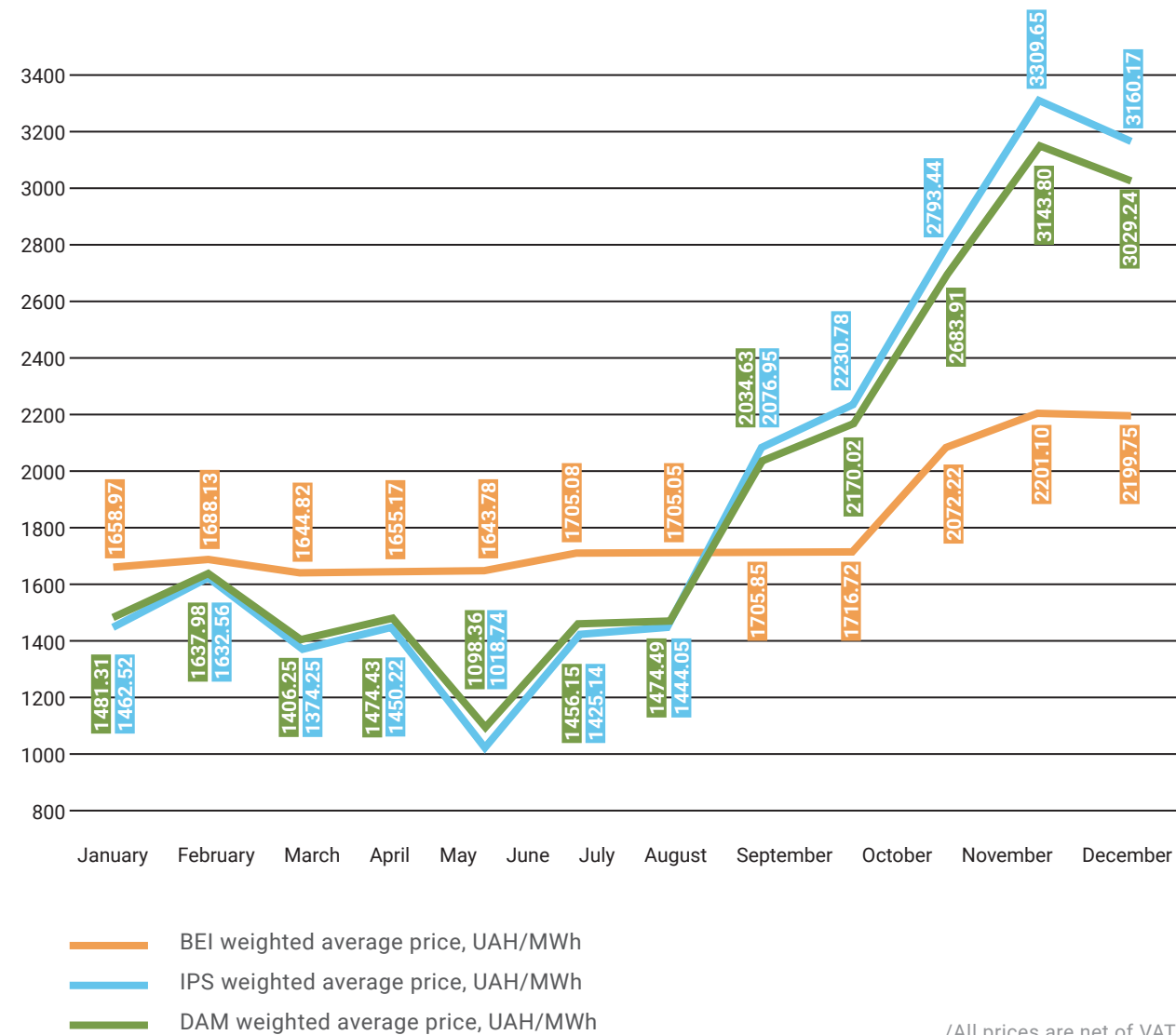
460. 8 MWh (net of VAT)
Burshtyn TPP Island | October

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W
D

DAM

The weighted average price of electricity purchase and sale on the DAM in 2021 was 49,26% higher than in 2020 and amounted to 2 038,60 UAH/MWh. DAM average hourly prices in the IPS of Ukraine deviated from price restrictions within all months of 2021 during the minimum load hours in the range from 16,2% to 58,6%, except for February where the deviation was only 3,1%. During the maximum load hours, the average hourly prices deviated from price restrictions within all months of 2021 in the range from 11% to 44,3%, except for November and December, where deviations were less than 10% (4,8% and 8,9% respectively). In Burshtyn Energy Island, the average hourly prices almost did not deviate from the price caps during the minimum load hours, and the average hourly prices during the maximum load hours deviated from the price caps in all months of 2021 in the range from 0,8% to 7,2%.

DAM WEIGHTED AVERAGE PRICES PER MONTH IN 2021



IDM

The weighted average price of accepted electricity on the IDM increased by 40,81% and amounted to 1 835,08 UAH/MWh (IPS of Ukraine - 1 834,47 UAH/MWh, BEI - 1 904,74 UAH/MWh) in 2021, compared to 2020.

The IDM weighted average prices of electricity purchase and sale in the IPS of Ukraine for most months (March - June) were lower than DAM prices in the first half of 2021. Starting from the second half of the year, the IDM weighted average prices were higher than the DAM prices, except for December 2021. The IDM weighted average prices in Burshtyn Energy Island were higher in 2021 than the DAM weighted average prices, except for four months (March, May, July and November).

IDM WEIGHTED AVERAGE PRICES PER MONTH IN 2021



DAM PRICES. COMPARISON WITH PRICES IN EUROPE

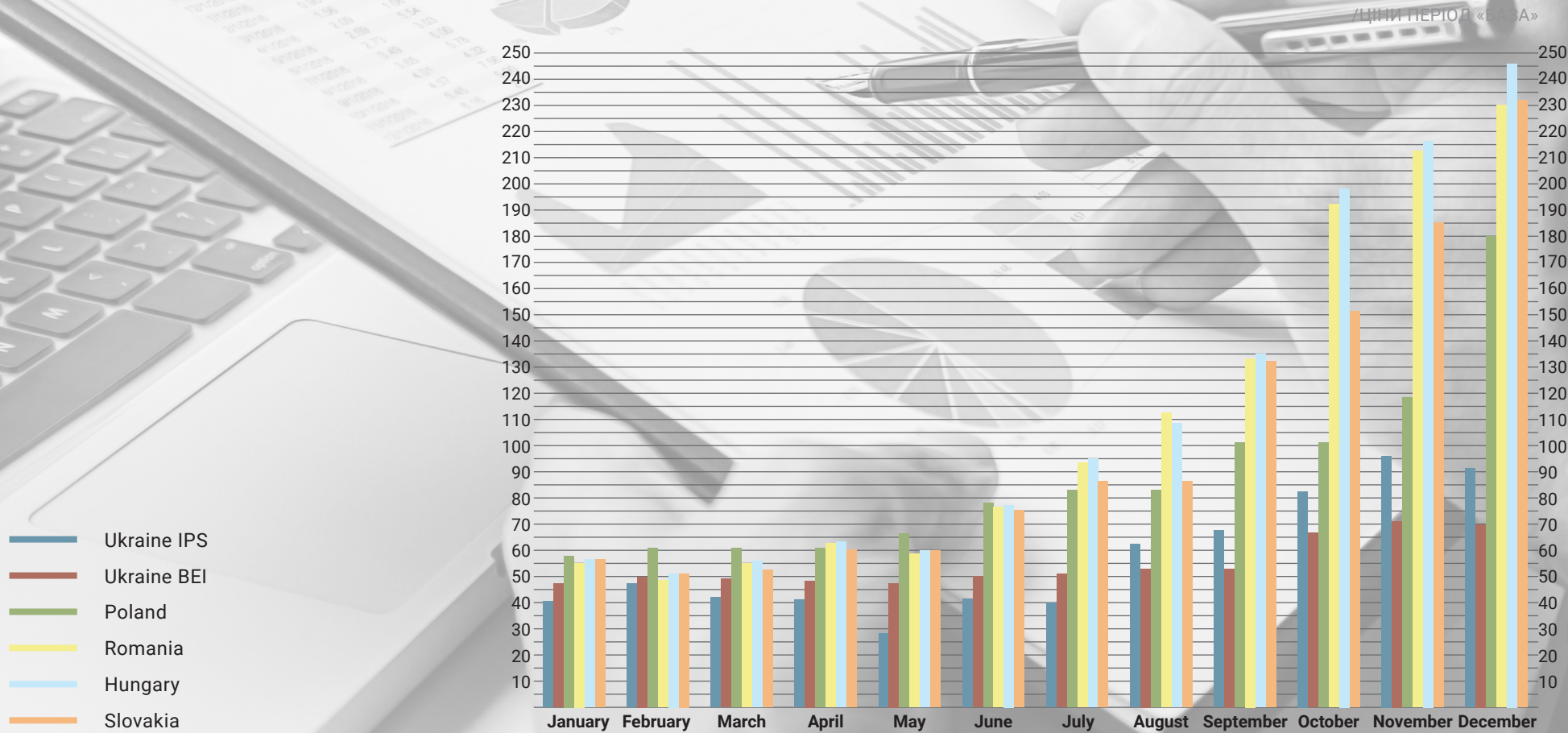
The lowest prices were fixed on the spot electricity market of Ukraine - the day-ahead market in 2021, compared with neighboring European countries.

In particular, businesses in Hungary bought electricity on the DAM at a price of 113,86 EUR/MWh last year, which was 103,8% higher than the DAM base load price index in the IPS of Ukraine.

Compared to Slovakia, where the base load price index was 102,75 EUR/MWh in 2021, Ukrainian businesses paid for electricity 45,62% less last year.

The base load price index of electricity on the day-ahead market in Poland was 88,22 EUR/MWh in 2021, which was 57,9% higher than the DAM base load price index in the IPS of Ukraine.

DAM PRICES. COMPARISON WITH PRICES IN EUROPE
(EUR/MWh)



VOLUMES AND COST

The total volume of electricity trades on the day-ahead market amounted to 35 762,13 GWh in 2021, which was 2,6% less than in 2020. 5 058,31 GWh of electricity were accepted on the intraday market, which was 15,62% less than in 2020.

The cost of electricity purchase and sale at the Market Operator's site amounted to UAH 98 624,64 million in 2021.

THE VOLUME AND COST OF ACCEPTED ELECTRICITY ON THE DAM AND IDM IN 2021

VOLUME OF ELECTRICITY PURCHASE AND SALE ON THE DAM AND IDM

40 820, 43
GWh
In 2021



COST OF ELECTRICITY PURCHASE AND SALE ON THE DAM AND IDM

UAH
98 624, 64
million
(with VAT)
In 2021

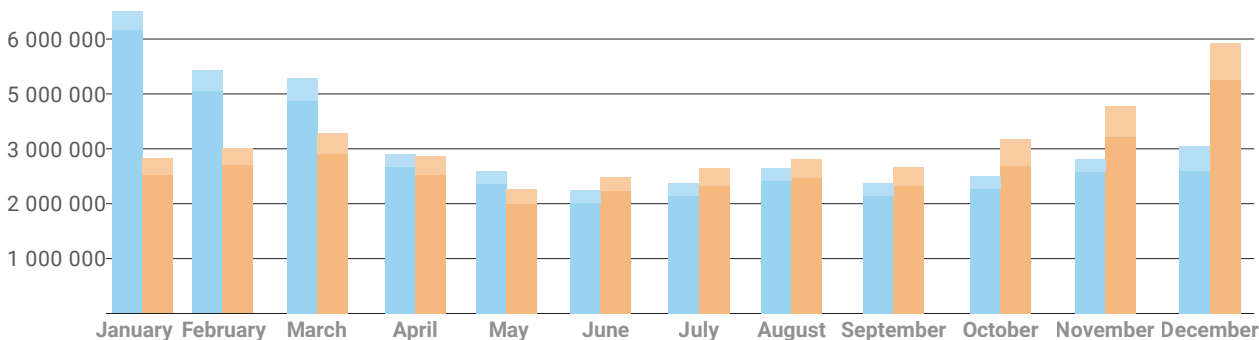


DAM VOLUME OF TRADES IN 2020-2021

IPS of Ukraine, GWh			Burshtyn Energy Island, GWh			DAM total, GWh		
2020	2021	Change, %	2020	2021	Change, %	2020	2021	Change, %
33 457, 7	31 361, 7	-6,26 %	3 260, 6	4 400, 4	+34,96 %	36 718, 3	35 762, 1	-2,6 %

2020 IPS volume of electricity purchase and sale, MWh
2021 IPS volume of electricity purchase and sale, MWh

2020 BEI volume of electricity purchase and sale, MWh
2021 BEI volume of electricity purchase and sale, MWh

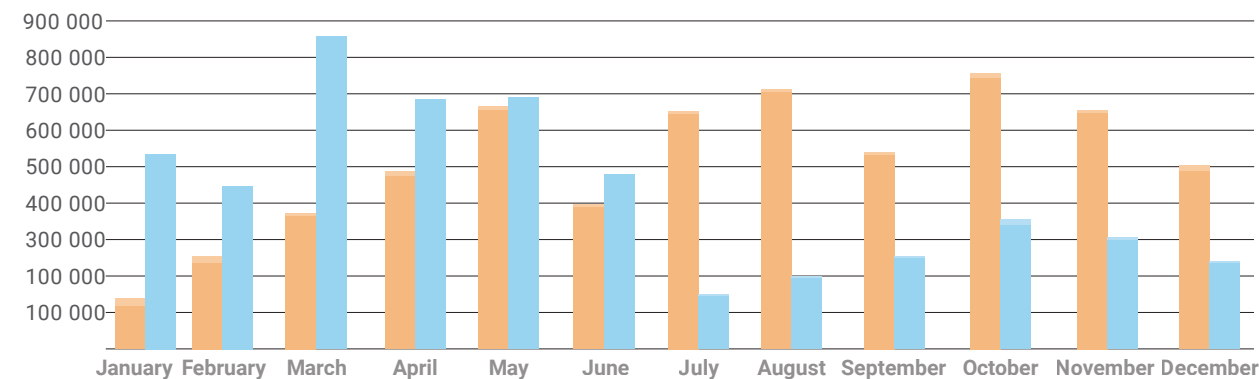


IDM VOLUME OF TRADES IN 2020-2021

IPS of Ukraine, GWh			Burshtyn Energy Island, GWh			IDM total, GWh		
2020	2021	Change, %	2020	2021	Change, %	2020	2021	Change, %
5 886, 3	5 014, 3	-14, 81 %	108, 2	44	-59,33 %	5 994, 5	5 058, 3	-15, 62 %

2020 IPS volume of electricity purchase and sale, MWh
2021 IPS volume of electricity purchase and sale, MWh

2020 BEI volume of electricity purchase and sale, MWh
2021 BEI volume of electricity purchase and sale, MWh



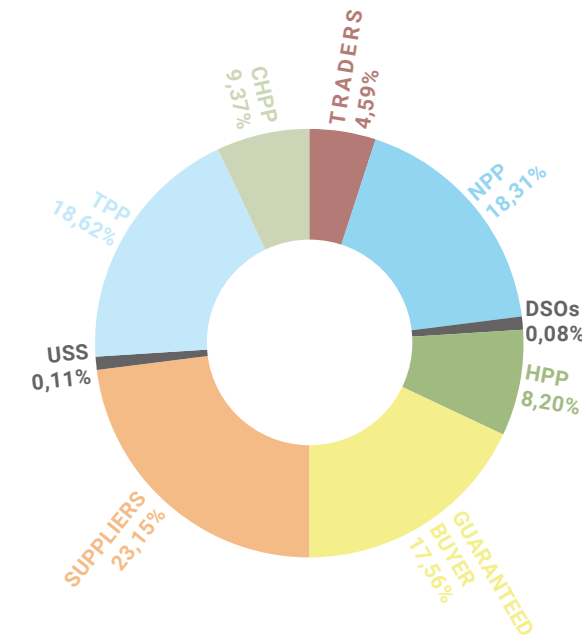
The volume of trades at the Market Operator's site amounted to 27,4% of total electricity consumption by Ukraine in 2021. That indicator was 29,4% in 2020.

STRUCTURE OF TRADES

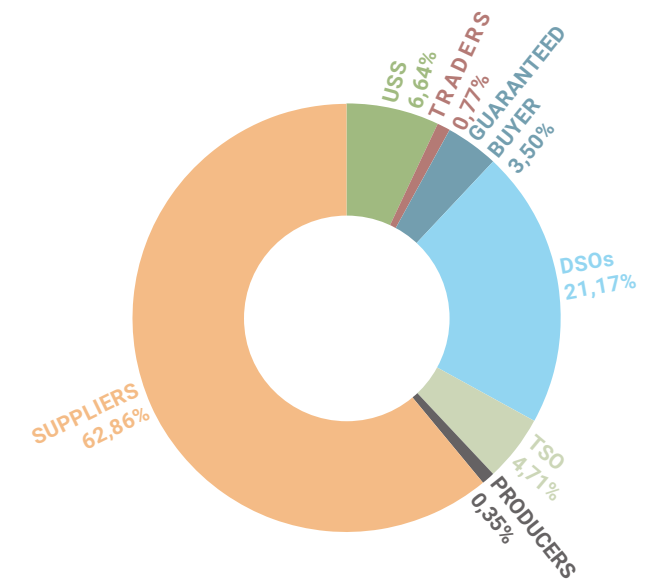
There are minor changes in the structure of DAM volume of electricity sale in the IPS of Ukraine by activity types, compared to 2020. Thus, the share in the sales volumes of electricity producers, together with the Guaranteed Buyer's sales volumes decreased to 69,6% in 2021, while that share was at a level of 72% in 2020. The share of electricity suppliers' sales volumes decreased slightly and amounted to 25,2% of total volume of trades compared to 2020. Traders' volume of sales increased in 2021 and amounted to 5,1% of total volume of trades compared to 2020, where traders' volume of sales was only 1,3%.

Instead, there was a significant change in the structure of DAM volume of electricity sale in Burshtyn Energy Island. The share of electricity producers' sales volumes, together with the Guaranteed Buyers' sales volumes, increased significantly from 54% in 2020 to 89,6% in 2021. Volume of sales of electricity suppliers decreased and amounted to 9,3% of total volume of trades against 40% in 2020. The decrease in volume of sales by electricity suppliers and the increase in volume of sales by producers in 2021 were probably due to a decrease in the volume of electricity imports.

STRUCTURE OF PURCHASE AND SALE VOLUMES ON THE DAM FOR 2021

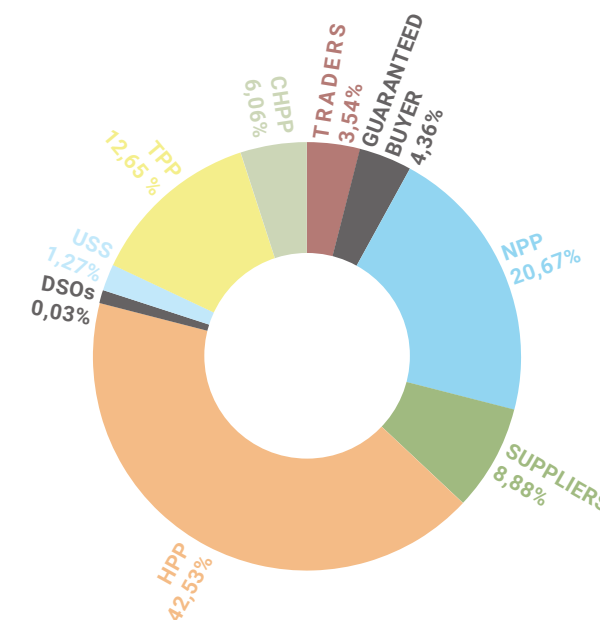


STRUCTURE OF SALE VOLUMES ON THE DAM

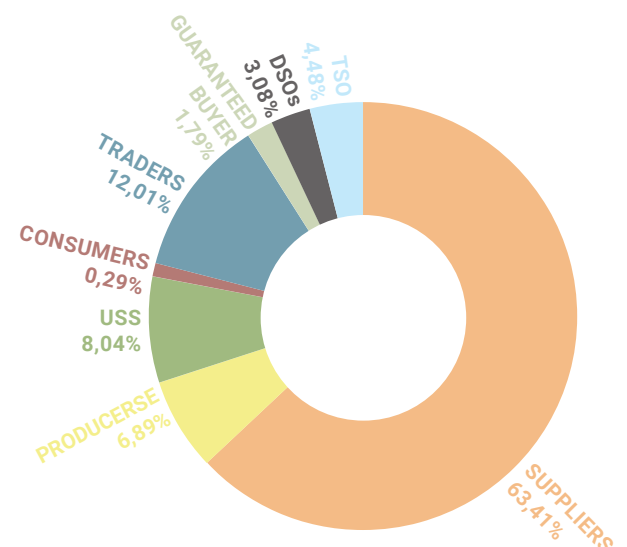


STRUCTURE OF PURCHASE VOLUMES ON THE DAM

STRUCTURE OF PURCHASE AND SALE VOLUMES ON THE IDM FOR 2021



STRUCTURE OF SALE VOLUMES ON THE IDM



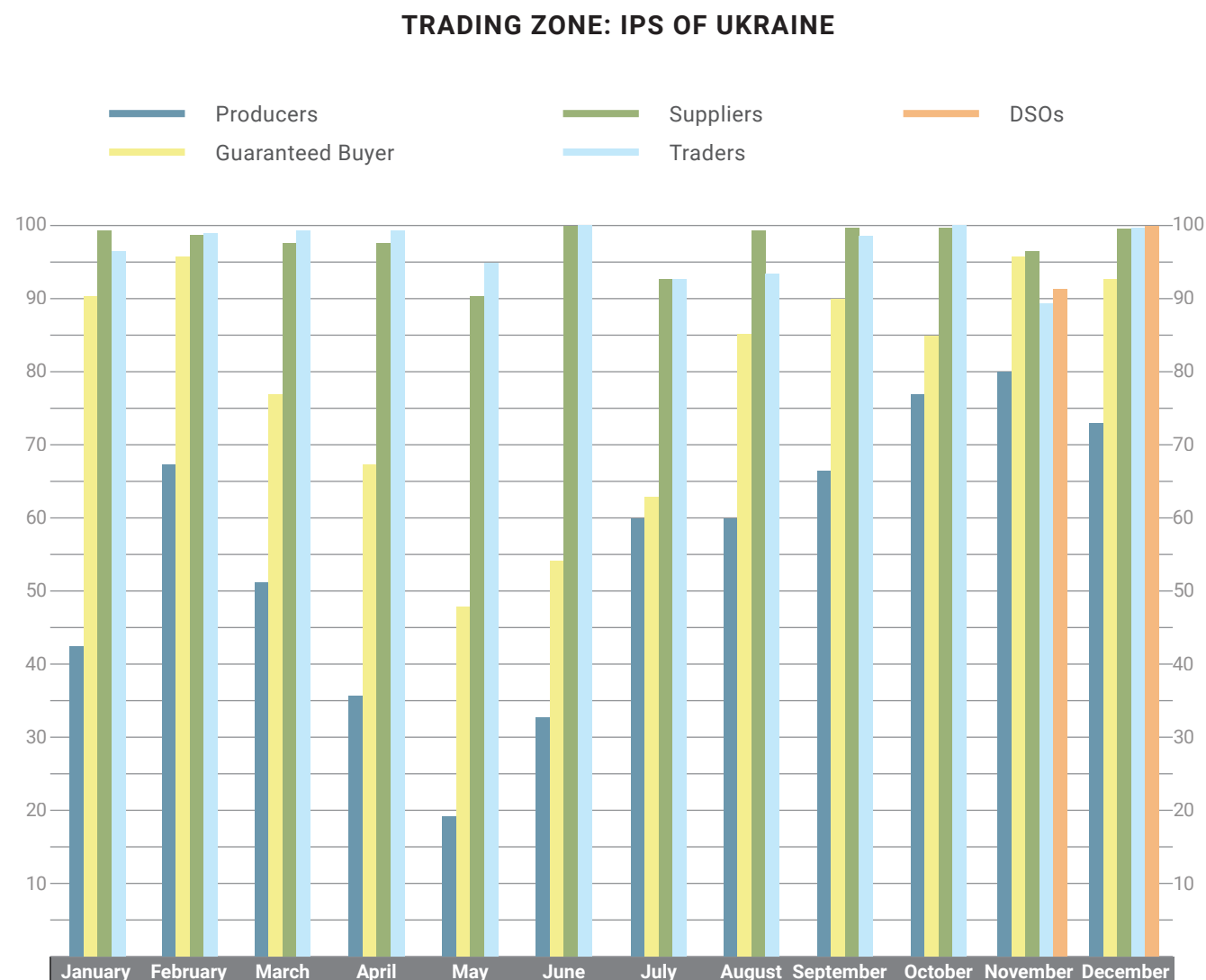
STRUCTURE OF PURCHASE VOLUMES ON THE IDM

DYNAMICS OF SUPPLY, DEMAND AND VOLUME OF TRADES ON THE DAM IN 2020-2021

The share of volume acceptance from the declared one for sale by producers was at the level of 42,8% on the DAM in the IPS of Ukraine at the beginning of 2021. The highest rate of orders` acceptance from producers was recorded in November 2021 at a level of 80%. Compared with producers, electricity suppliers and traders have significantly higher rates, their share of acceptance of volume declared for sale ranged from 89,9% to 100%. First of all, that was due to the sale orders submission with slightly lower price indicators by electricity suppliers.

The share of acceptance of volume declared by producers for sale increased significantly at the end of the year in Burshtyn Energy Island: the highest indicators were in September-December 2021 and ranged from 71,7% to 91,5%.

THE SHARE OF ACCEPTED VOLUME IN THE DECLARED VOLUME FOR SALE ON THE DAM



TRADING ZONE: BURSHTYN ENERGY ISLAND



DAM AND IDM PARTICIPANTS

The total number of agreements on participation in the DAM and IDM is 678. They have been registered since the launch of the JSC Market Operator. 121 of all agreements were concluded in 2021. There were 556 agreements on participation in the DAM and IDM as of December 31, 2021.



ENVIRONMENTAL ASPECTS

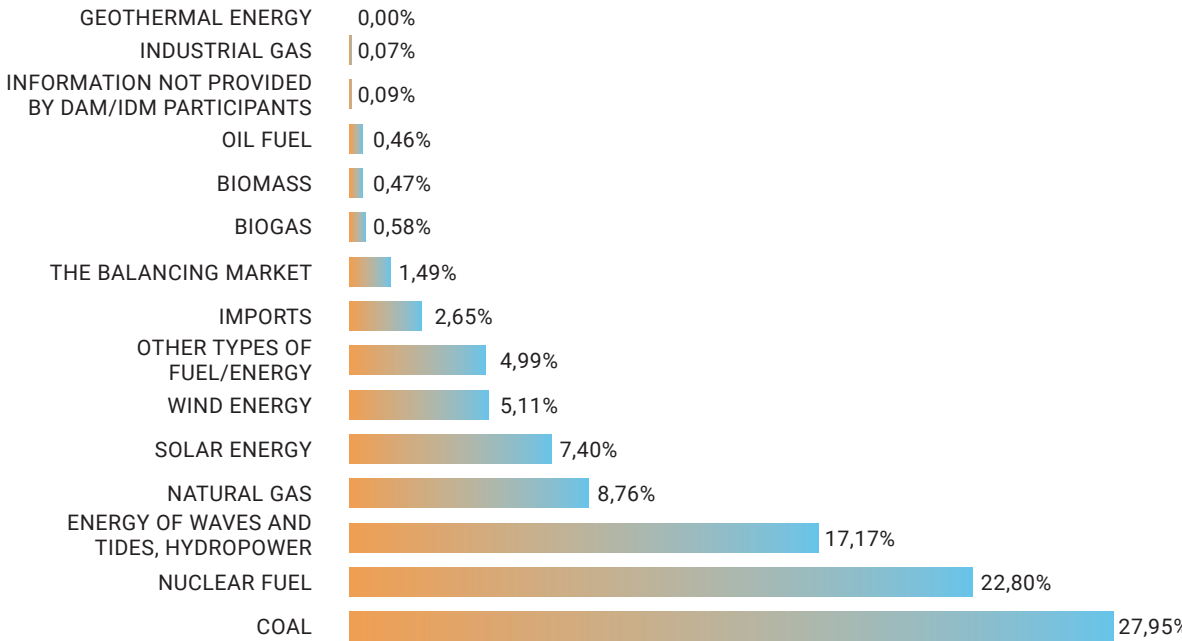
27,95% of electricity sold on the day-ahead market and intraday market in 2021 was generated from coal, and 22,80% - from nuclear fuel.

The share of electricity produced from hydropower and sold on the DAM and IDM in 2021 was 17,17%, from natural gas – 8,76%, from solar energy – 7,40%, from wind energy - 5,11%, from others types of fuel – 4,99%, from biogas – 0,58%, from biomass – 0,47%, from fuel oil – 0,46%, from industrial gas – 0,07%.

4,14% of electricity sold on the DAM and IDM last year had a source of unknown origin. The share of another 0,09% of the electricity source is unknown due to the failure of some market participants to provide with relevant information.

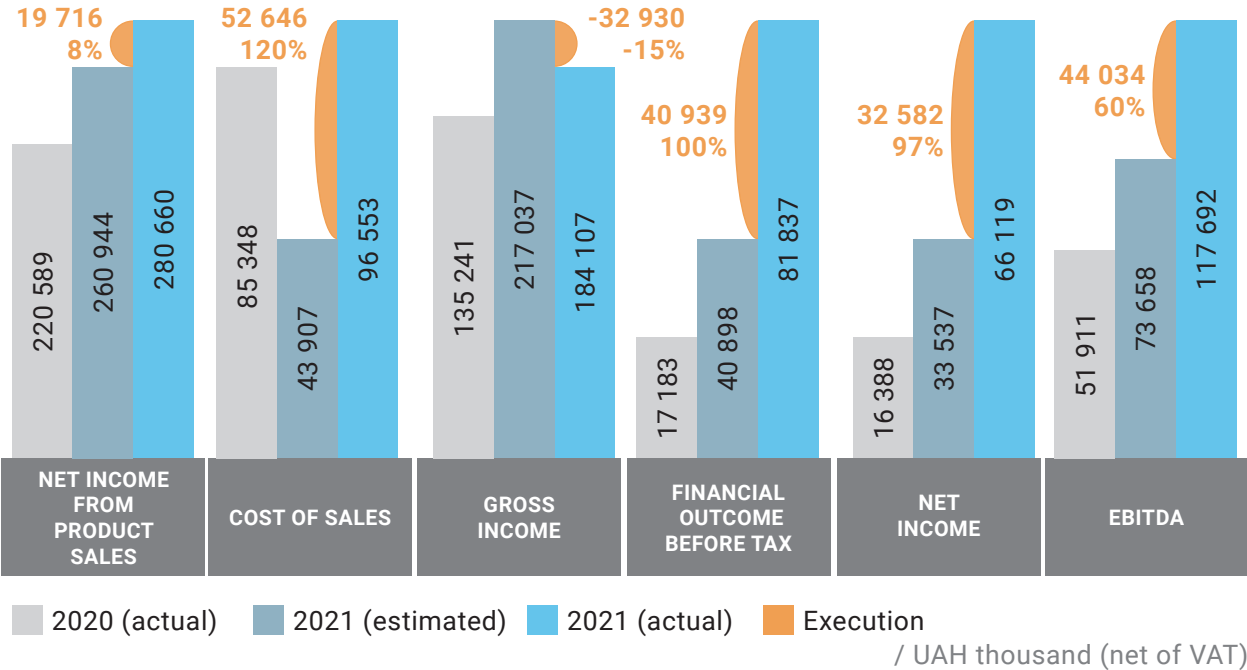
Since August 2021, the market participants report on the electricity volume sold on the day-ahead market and intraday market, as well as inform on the share of each source of energy (NEURC`s Resolution № 1312 dated 11 August 2021) before the 15th day of each month. Such informing is conditioned by the Law of Ukraine "On the Electricity Market", as energy production significantly affects the environment.

THE SHARE OF EACH SOURCE OF ENERGY USED TO PRODUCE ELECTRICITY THAT WAS SOLD ON THE DAM AND IDM IN 2021

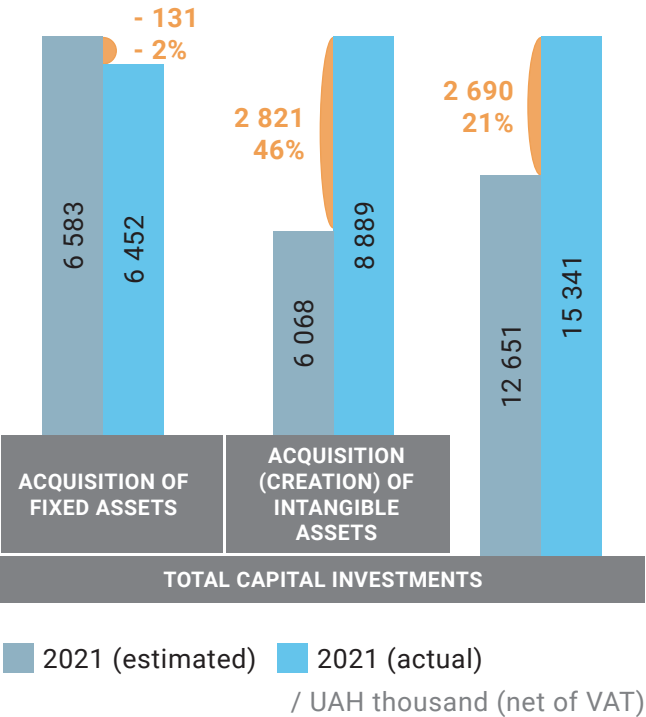


FINANCIAL INDICATORS OF JSC MARKET OPERATOR

The JSC Market Operator received UAH 66 million of net income in 2021. That was 100% more than planned and it was due to the growth of actual income from sales, as well as operational expenses reduction. UAH 212,4 million of taxes and fees were paid to the budgets of various levels, where almost 50% of all taxes were paid as VAT. The EBITDA indicator of the Market Operator amounted to UAH 117,7 million for 2021.



CAPITAL INVESTMENT

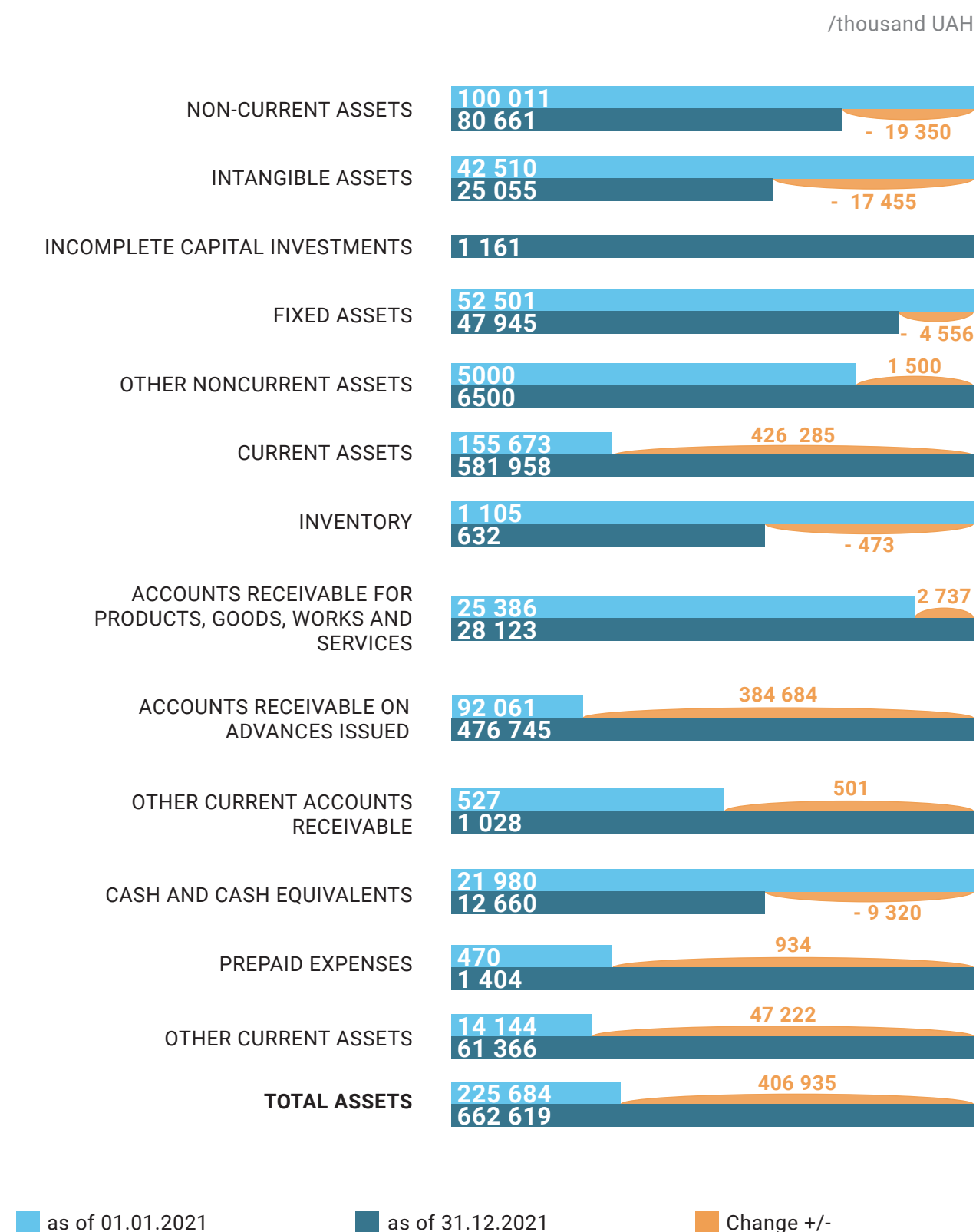


The growth of the Market operator's financial indicators was influenced by the increase regarding to the plan of:

- volume of electricity purchased and sold on the DAM and IDM - by 4 835,3 MWh up to 40 820,4 thousand MWh that is 13% more;
- increase of the number of active participants on the DAM and IDM from 381 to 444 participants (16% more).

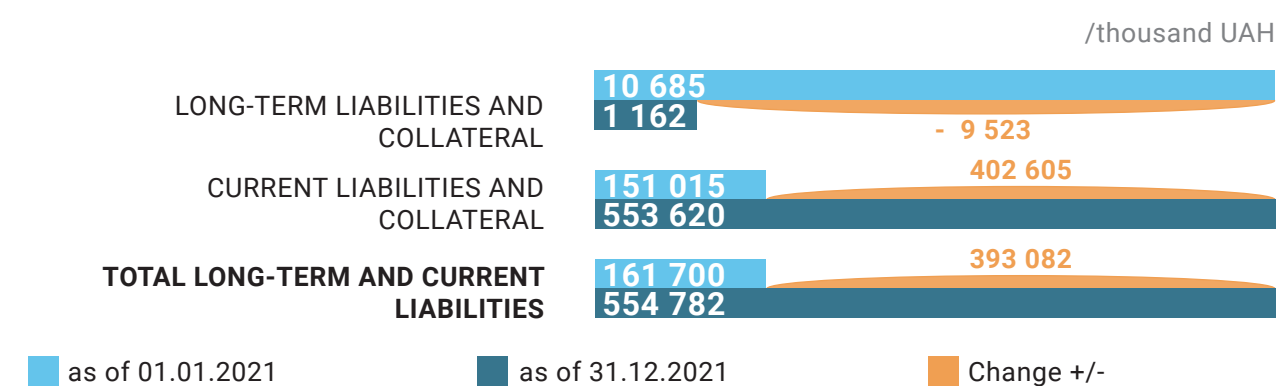
The main areas of capital investments in 2021 were: server and networking equipment, computer and office equipment, the software complex equipment for electricity calculations, system software, antivirus systems and software for information protection, etc.

THE STRUCTURE OF THE ASSETS OF JSC MARKET OPERATOR IN 2021



The Market operator's assets growth was UAH 406 935 thousand for 2021. At the same time, the share of current assets on the balance sheet currency increased from 61% to 88% as of 31.12.2021. The most liquid assets are money in bank accounts and accounts receivable for electricity, the total share of which amounted to 74% on the balance sheet currency. The share of accounts receivable for electricity on the balance sheet currency has also increased and amounted to 72% as of 31.12.2021. The increase in accounts receivable for electricity by the end of 2021 (up to UAH 476 745 thousand) was due solely to the peculiarities of the day-ahead market and intraday market functioning, as well as the reflection in the accounting of settlements on the day-ahead market in the last day of the month.

THE LIABILITIES STRUCTURE OF JSC MARKET OPERATOR IN 2021



The increase in the Market operator's liabilities was UAH 393 082 thousand for 2021. The share of long-term and current liabilities was 84% as of 31.12.2021, while the accounts payable for electricity is the largest liability, with a share on the balance sheet currency of 72%. Taking into account the characteristic of electricity purchase and sale process on the DAM and IDM established by law, the accounts payable for electricity (UAH 477 971 thousand) are fully covered by accounts receivable.

The liquidity and solvency is one of the criteria for assessment the financial health of the JSC Market Operator. The main liquidity indicators are the coverage ratio and working capital. The JSC Market Operator has sufficient level of liquidity, as indicated by the coverage ratio (current liquidity) of 1,05. This ratio indicates the adequacy of resources that can be used to repay current liabilities (the standard is > 1-1,5).

The working capital required to maintain the financial stability of the JSC Market Operator amounted to UAH 28 million at the end of 2021. That is, the excess of working capital over short-term liabilities means that JSC Market Operator can repay its short-term liabilities, as well as it has reserves to expand its activities.

TARIFF POLICY

The cost of the Market operator's services consists of two components - fixed payment for participation in the day-ahead market and the intraday market, as well as payment for the purchase and sale of electricity in these market segments.

Fixed payment for participation in DAM/IDM is a target monthly payment for support services and granting the right to use the Market operator's software. The amount of this payment is agreed upon by the resolution of the NEURC.

Payment for purchase and sale operations on the DAM/IDM is paid by electricity buyers and sellers daily according to the trade results. Its value depends on volume of electricity purchase and sale on the DAM/IDM and the tariff rate for the electricity purchase and sale on the DAM and IDM, which is approved by the resolution of the NEURC.

The Market operator's tariff changed three times in 2021. Market participants paid 3,67 UAH/MWh (net of VAT) for purchase and sale operations on the DAM and IDM from the beginning of the year. The tariff has changed by 3,23 UAH/MWh (net of VAT) from June 18, 2021. The JSC Market Operator initiated a tariff review in October, taking into account the changes in volume of electricity trades on the DAM and IDM. The NEURC approved a new tariff at a rate of UAH 2,10/MWh (net of VAT) from November 17 until the end of 2021, with was 43% less than the established one at the beginning of the year.

The fixed payment for participation in DAM/IDM amounted to UAH 3 016,19 (net of VAT) in 2021, which was 7,8% less than market participants paid in 2020.





The JSC Market Operator is certified on three standards of the International Organization for Standardization.

INTERNATIONAL QUALITY STANDARDS

1 Quality management system. **ISO 9001:2015**

The external audit, conducted in 2020, confirmed the high standards of Market Operator's work and management system compliance with international quality management standards on the services provision for the electricity purchase and sale organizing.

2 Information technologies. Security techniques. Information security management systems. Requirements.

ISO 27001:2013

United Registrar of Systems Ukraine LLC, a representative of the British Management Systems Certification Authority United Registrar of Systems (Holdings) Limited, confirmed the compliance of the Market Operator's information security management system with the international standard on information security management on June 30, 2021.

Auditors confirmed that the Market Operator has a high level of data protection, confidentiality, integrity and accessibility of all physical and information assets, accessibility and reliability of information infrastructure and information systems (including XMtrade®/PXS and ETS/UA software).

This is an important step for the company's strategic tasks fulfilling in terms of integration of the trading platforms of electricity market operators in Ukraine and the EU countries and carrying out the market monitoring support in accordance with the REMIT requirements.

3 Anti-bribery management systems. Requirements – Standard that describes requirements on anti-bribery management systems implementation. **ISO 37001**

On August 31, 2021, the Market Operator received an International Certificate on the anti-bribery management system compliance with the ISO 37001 requirements. The audit was conducted by the PECB Ukraine, which is the official representative of the PECB Group Inc. certification body in Ukraine – a world leader in training and certification of personnel, certification of corporate governance systems and products in accordance with international standards – supported by USAID Energy Security Project in Ukraine.

IT-INFRASTRUCTURE AND CYBER SECURITY

The JSC "Market Operator" faces the task to ensure the continuity and efficiency of electricity trading process, therefore, its work is focused on maximum automation and digitalization of business processes. The use of virtualization tools and technologies implementing high availability services, the introduction of distributed data storage networks, modern automatic back-up facilities made it possible to ensure uninterrupted operation of the company's information resources 24/7.

The HESK Registration System was introduced for transparent communication between market participants and THE JSC "Market Operator" on the issues of the XMtrade / PXS software package operation, which is used to organize and conduct electricity trading on the day-ahead and intraday markets. This made it possible to formalize relations with counterparties, promptly provide market participants with qualified technical assistance, monitor the progress of reacting to emerging problems, as well as to form a knowledge base with answers to the most common questions.

In order to maximally eliminate the influence of the human factor on the company's technological processes, the work is being done to further technological operations automation. In particular, the following processes are used: a software module for automatic verification the of legal entities' details, an e-journal for monitoring the status of the "day ahead" and intraday market participants, automated information receipt on market participants from the transmission system operator's IT-platform.

The existence of an information security management system, certified in accordance with the ISO 27001 and a number of modern cyber defence tools at the JSC "Market Operator" ensures the maintenance of an appropriate level of information security. It also allows responding effectively on attempts on destabilization of the "day-ahead" and intraday markets operation through an unauthorized interference into the work of company's information systems.

DEVELOPMENT STRATEGY

1

Business processes optimization on the day-ahead market and intraday market

It is planned to use own software complex «Electricity Trading System (ETS/UA)» in terms of netting operations and conducting electronic commercial invoice on electricity sale and purchase with using a qualified electronic signature; to use several escrow accounts of DAM/IDM participants and the prioritization of withdrawals from these accounts. Market Operator work with authorized banks to ensure market participants using multiple escrow accounts in different banks at the same time.

2

The Ministry of Energy's assistance in improving transparency of the Ukrainian electricity market

Market Operator works on expanding the existing platform for systematization of all industry information owned by the Ministry of Energy of Ukraine. We are implementing the Tableau platform, which will digitize the information available in the Ministry of Energy of Ukraine. Market Operator is ready to implement the Registered Reporting Mechanism (RRM) software as well as the software package for the Transparency Platform operation in order to control the possible misuses on the electricity market.

Clearing introduction on the DAM and IDM

Market Operator is going to start the step-by-step introduction of clearing on the DAM and IDM. Netting will be the first one, a complete system of mutual settlements with risk assessment and financial guarantees system.

The advantage of clearing settlements is a significant reduction in the balance of payments and funds turnover on payment funds, facilitating the non-cash turnover management. Clearing helps to simplify, speed up and reduce the calculations cost, in particular, it reduces the cost of financial transactions administration and maintenance. The risk management system will eliminate the negative consequences of a possible default of one of the parties, guaranteeing the fulfillment of obligations under the concluded agreements.

3

Further development of information technologies

The Redmine project management system (PMS) is being implemented for the ability to make effective decisions and direct the "Market Operator" resources to achieve its strategic goals.

It is planned to finalize the electronic document management system in terms of the comprehensive use of qualified electronic signatures for documents to reduce the number of paper ones in maximum.

Market Operator JSC constantly increases the information security level, particularly, in terms of implementing a modern vulnerability scanner. This will allow to improve its work on control and elimination of possible information security deficiencies due to the constant automatic monitoring, analysis of server and network equipment, as well as software one to detect errors in a program code and settings that can be used for malicious intervention ("hacking" attacks and malicious software distribution, etc.).

4

5

Market Coupling with the European neighbors

The Law of Ukraine “On Electricity Market” provides the integration of the day-ahead and intraday markets with the European electricity market. We initiated the establishment of a working group in the Ministry of Energy of Ukraine to prepare the process of unification of Ukrainian electricity market with markets of the EU member states or the Energy Community members. The corresponding order of the Ministry of Energy №264 was issued on October 23, 2021.

The working group is working on a roadmap for the market coupling of Ukraine with Moldova and the EU member states or the Energy Community members. Legislation is being studied for additional changes.

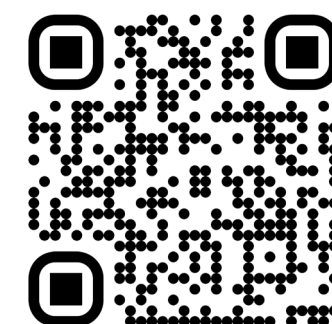
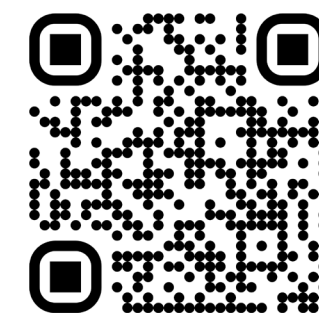
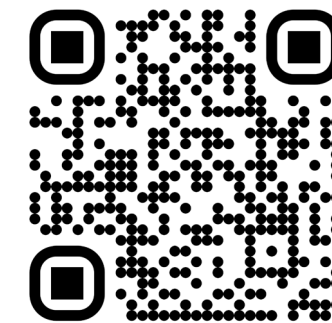
6

Electricity trading under the bilateral contracts at the Market Operator's site

The electricity market operators in Europe, including Bulgaria, Hungary, Portugal, Romania, Spain, Poland, Slovakia and the Czech Republic, organize and conduct electronic auctions for the electricity purchase and sale under the bilateral contracts, in addition to the DAM and IDM administration.

We are ready to take over such tasks. Electricity trading under the bilateral contracts on the Market Operator's site will provide equal and transparent conditions for participation in auctions of all its participants and will create competitive conditions for both trading participants and electronic auctions organizers.

The Law of Ukraine №3508-d ensured the right for the Market Operator to conduct such operations. The software, written for trading under bilateral contracts, has received a positive feedback from market participants who have already tested it. We are working on the issues to develop and finalize the drafts of legal acts required, as well as a software complex functionality extension.



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