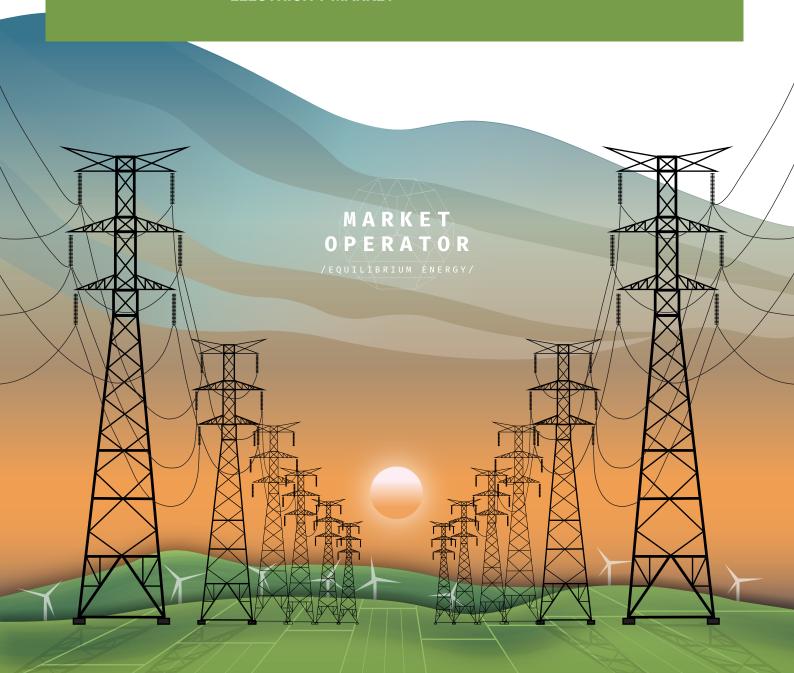
ANNUAL REPORT 2023

BEATEN PATH TO THE EU'S GLOBAL ELECTRICITY MARKET



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OF MINISTER OF ENERGY OF UKRAINE

MR GERMAN GALUSHCHENKO



Despite russia's attempts to destroy the energy infrastructure, Ukraine's potential in the energy sector remains extremely high. Facing these challenges, we remain committed to our course of integration into the European space, including the energy sector.

An extremely significant achievement of Ukrainian power engineers was the synchronisation with the European network of system operators of electricity transmission ENTSO-E. This event confirms the maturity of our energy system and the reliability of all its components, even in the context of a full-scale war. I am confident that the next significant milestone to be achieved in the near future is the coupling of the Ukrainian spot market with the European one.

The Ukrainian and European spot markets coupling will make our energy market more stable, increase competition and reduce the influence of particular players.

JSC "Market operator" plays and will continue to play an important role in these processes. The Company is one of the pillars of stability that, at the beginning of the full-scale invasion, allowed us to keep the energy system and the energy market solid and to move and develop further. "Market operator" continues to prove this by demonstrating a successful example of a corporatised state-owned company.

It is also important that JSC "Market operator" operates in accordance with the European standards of the energy exchange. In 2023, the Company carried out significant preparatory work that is important for the European integration. There is still a lot hard work ahead to become a nominated market operator and ensure the operation of the spot electricity market in the context of integration with the EU market.

These are difficult challenges, but though combatting them, we will jointly make the Ukrainian energy sector more sustainable and increase its potential in the future after the Victory. Despite all the mentioned, Ukraine is the undisputed energy hub of Europe!

I wish you good luck and inspiration to make your most ambitious plans real!

WELCOME SPEECH OF JSC "MARKET OPERATOR" SUPERVISORY BOARD

This is our first year of work as members of the Supervisory Board of JSC "Market operator", which has not been easy emotionally, as well as for every Ukrainian, but we can safely say that we have coped with the set tasks: building a corporate governance system based on the best European practices, implementing a risk management and compliance system, establishing effective interaction with the Company's executive body, responding promptly to the challenges of the present and to the needs of the Company, developing and approving a number of internal documents, and establishing internal processes of activities necessary for the sustainable development of JSC "Market operator".

We see great potential and a bright future for the Company. One of the important areas of the Company's development is active participation in the unification of the spot electricity market, assuming the function of a key link in the chain of interaction between Ukraine and European countries, acquiring NEMO status and ensuring uninterrupted electricity trade, which, in turn, will enable Ukrainian companies to sell their products and the energy system to maintain a balance.

Among the key tasks for the next year, we see maximum support for the Company's activities, ensuring its dynamic development, completing the alignment of corporate governance business processes with European standards and continuous monitoring of new positive practices, establishing close cooperation with European energy exchanges to share experience and practical skills in implementing market coupling, participating in European and international energy associations, identifying and responding to risks that the Company will face, building an effective internal control system, etc.

We understand that compliance with European standards is a prerequisite for market integration, acquisition of NEMO status by JSC "Market operator" and obtaining a commodity exchange licence. These are the Company's contributions to Ukraine's path to the European Union.

We have indeed ambitious goals, but through the mutual cooperation we have to make our Victory closer to us, and also to develop the favorable environment for Ukraine's reconstruction as free, independent, and the unified state.

Sincerely, and with faith in victory, the members of the Supervisory Board of JSC "Market operator".



Olena Kovalchuk

Łukasz Dziekoński

Yuliia Zhytnyk

OPERATOR" DIRECTOR GENERAL

MR OLEKSANDR HAVVA



Dear partners,

the past year, despite the aggressive military actions of our "neighbour" in the east and almost daily shelling of energy infrastructure, has made us more resilient to the unpredictable challenges of the times. Having gone through the difficult winter of 2022-2023, Ukrainian power engineers prepared for new possible threats from russia and carried out a large-scale repair campaign to keep the energy front defended and provide heat and light to the homes of millions of Ukrainian citizens.

"Market operator" was no exception and worked to prevent any emergency situations in the spot electricity market of Ukraine. We have strengthened cybersecurity measures and employed the highest level of information security. Electricity trading continued as usual, despite frequent air alerts and the disturbing May 2023, and Ukrainian generation received daily payments for electricity sold on our platform. The year's results confirmed the high level of trust in the "Market operator". 97.8% of the surveyed companies that are our partners gave a positive assessment of the spot market in 2023.

In 2023, we were re-certified for the compliance of our quality management system with international quality management standards regarding the provision of services for the organisation of the purchase and sale of electricity. We also passed the annual external audit with flying colours and obtained an international certificate of compliance of the Company's anti-corruption policy with ISO 37001. At the end of the year, AC Crowe Ukraine confirmed the transparency of the work of the "Market operator".

We continued our development and offered the business a platform for retail electricity trade – RETAIL ENERGY PLATFORM. REP is a platform where suppliers can offer their terms and conditions and the price of electricity supply, and consumers can quickly find a favourable offer. In addition, we have been studying the European experience of trading in electricity origin guarantees and are ready to offer new solutions to businesses this year to meet global trends in green energy consumption.

Responding to business requests for joint electricity trade with the single electricity market of the European Union member states, we are enriching our experience in market coupling. We are actively involved in the Committee of European Market Operators to understand trends in Europe and ensure proper preparation for integration into this energy community.

In November 2023 we brought together Ukrainian business and industry experts and together with NPC Ukrenergo, and talked openly about the prospects and risks of coupling the Ukrainian and European spot and balancing market with the European ones. Our aspirations were supported by the energy community, which expressed its readiness to work together on the European future of the day-ahead and intraday markets. The work is ongoing and we hope that our concerns will be taken into account when the NEURC, the Ministry of Energy of Ukraine, the Government and the Parliament of Ukraine make their respective decisions.

We are grateful to our partners and JSC "Market operator" team for the great job in 2023. Wish to all of us the enormous strength to combat our evil eastern neighbor, the victory in 2024 and energy eurointegration.



ABOUT JSC "MARKET OPERATOR":

MANAGEMENT AND BUSINESS PROCESSES

In 2019, through the reform of the electricity market, Ukraine created a national legal monopoly – a state-owned enterprise, now Joint-stock company "Market operator" – to organise the purchase and sale of electricity in accordance with European rules in the B2B segment on spot trading terms and conditions. On 30 June of that year, Ukrainian companies contracted electricity for the first time on the day-ahead and intraday markets on market terms and conditions, where the price was formed on the basis of supply and demand. On the same day, a daily system of financial settlements between sellers and buyers through escrow accounts was launched, making the spot market the only debt-free segment of the Ukrainian electricity market.

Since then, the spot electricity market has matured. It went through a period of formation, a period of pandemic, which actually made it possible to prepare all business processes for remote operation and to conduct trading and settlements without interruption in the first days of the large-scale attack by russia. DAM and IDM resisted panic and withstood the uncertainty caused by the new aggressive phase of the war against Ukraine. JSC "Market operator" remained in touch 24/7 and ensured stable and transparent operation of the spot market.

IN **2023**, **22.4** TWH OF ELECTRICITY WAS SOLD THOUGH JSC "MARKET OPERATOR" PLATFORM

THIS IS **7.2%** MORE THAN IN 2022.

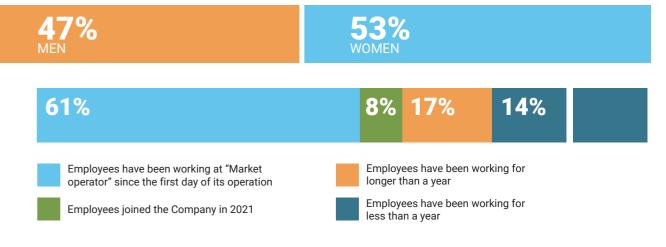
200 COMPANIES ACTIVELY TRADED KILOWATTS.

We have gone through the corporatisation process and offered new IT solutions to businesses: we introduced new trading products – block, flexible and linked block bids, automated and digitalised all business processes. As the owner of a qualified electronic trust services provider of the AKCC for the electricity market, JSC "Market operator" is the only energy company in Ukraine authorised to issue qualified electronic signatures.

Our IT specialists have developed and patented the ETS/UA software package that is a platform for conduction of e-auctions for the purchase and sale of electricity under bilateral contracts. It has helped us switch to electronic execution of electricity purchase and sale certificates on the DAM and IDM, as well as acceptance certificates for the services provided in electronic form.

Our ambitious goal is to launch netting on DAM and IDM with a further transition to clearing on other commodity markets, to start collecting and aggregating data according to international REMIT standards, to trade guarantees of origin, etc. A new challenge for JSC "Market operator" is the integration of the spot electricity market of Ukraine with the global market of the European Union.

EMPLOYEE PROFILE



"Market operator" adheres to the principles of gender equality in the management process, there are guarantees of equal opportunities and equal treatment in employment, equal remuneration for equivalent work, equal access to safety and social security, equality in career development and work-life balance, which are fair for both men and women.

UNDER THEORY OF GENERATIONS, OUR TEAM IS PRESENTED BY

3%

Baby Boomers

32%

Generation X

56%

Millennials 1981-1996 9%

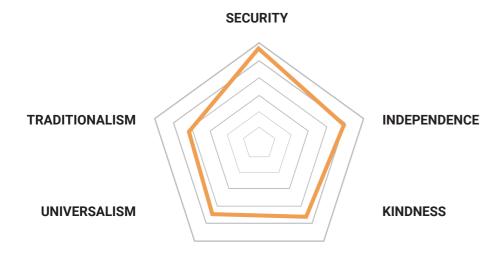
Zoomers 1996+(2000+)



EMPLOYEE PROFILE

5 most important values for our employees (according to the internal survey conducted in the beginning of 2024)

*Theory of human values under Schwartz theory.



To face the current challenges, our employees learn new skills. In 2023, employees of JSC "Market operator" studied and obtained certificates in the following areas:

public procurement military accounting at enterprises and compliance

international financial reporting standards management accounting

archival and record keeping information technology and cybersecurity English language learning

international quality standards

In 2023, employees of JSC "Market operator" were twice trained in first aid skills. They gained the knowledge and skills to provide first aid in case of emergencies (road accidents, domestic injuries, shelling, explosions, etc.).

Our office has implemented a corporate practice of caring for the children of employees. It has become especially relevant during the war, when parents need to work and take care of their children at the same time. We have got a kids room for the employees' children to be at office. We have a health insurance covering children, and a summer recreation programs assisted by our trade union.

WELL-BEING CULTURE

FINANCIAL STABILITY

Self-discovery and development.

FAVOURABLE ENVIRONMENT AND SOCIAL TIES

Ergonomic office: coffee room, meting room. Corporate networking, social projects.

PROFESSIONAL DEVELOPMENT

Training, delegation and responsibility for projects.

HEALTH

Life-work balance. Health insurance, vaccinations, etc.

IN 2023, THE STAFF OF JSC "MARKET OPERATOR" ALSO SUPPORTED THE INITIATIVE OF THE OFFICE OF THE PRESIDENT "OFFENSIVE GUARD" BY TRANSFERRING THEIR TRADE UNION CONTRIBUTIONS TO HELP THE STATE BORDER GUARD SERVICE PURCHASE ARMOURED VEHICLES TO PROTECT THE STATE BORDER.

THE FUNDRAISER INCLUDED COMPANIES FROM THE NUCLEAR, OIL AND GAS, ELECTRICITY AND COAL INDUSTRIES, AS WELL AS COMPANIES OPERATING THE DISTRIBUTION AND GAS TRANSMISSION SYSTEMS. EACH OF THEM MADE VARIOUS CONTRIBUTIONS TO HELP THE BORDER GUARDS. AS A RESULT, 50 ARMOURED PERSONNEL CARRIERS WERE PURCHASED FOR THE 15TH "STEEL FRONTIER" MOBILE BORDER GUARD DETACHMENT.



MAIN EVENTS OF THE YEAR

04.01.2023

THE ENVIRONMENTAL
POLICY OF "MARKET
OPERATOR", HEALTH AND
SAFETY OF EMPLOYEES ARE
CERTIFIED ACCORDING TO
ISO STANDARDS

05.06.2023

THE SUPERVISORY
BOARD OF JSC "MARKET
OPERATOR" MET WITH
THE MINISTER OF
ENERGY OF UKRAINE

On the basis of an audit conducted by Ukrmetrteststandard, JSC "Market operator" obtained certificates of compliance of the Environmental Management System with the requirements of ISO 14001:2015, and the health and safety management system with the requirements of ISO 45001:2019.

ISO 14001:2015 certifies the responsible environmental policy of the Company, economical use of energy and raw materials, and therefore the care of "Market operator" for the environment

The social responsibility of JSC "Market operator" is confirmed by the ISO 45001:2019 certificate. The Company takes care of the professional health and safety of employees, works with the risks associated with industrial injuries and emergencies.

The Supervisory Board of JSC "Market operator", which includes Polish investment manager, sectoral expert of the European Commission Łukasz Dziekoński, representative of the management of the European exchange Nord Pool Lina Masiulienė, Ukrainian lawyer Yuliia Zhytnyk and state official Olena Kovalchuk, met with the Minister of Energy of Ukraine German Galushchenko.

They discussed the further development of JSC "Market operator", in particular, the European integration vector of the spot electricity market of Ukraine. Members of the Supervisory Board members highlighted that the main priority in their work at the Company is the implementation of market coupling with the EU countries and the approval of a monopoly nominated market operator, which is the right decision at the stage of integration with the European electricity market.

German Galushchenko expressed his support for JSC "Market operator" initiatives and pointed out the importance of the European integration process of the Ukrainian energy sector.

JSC "Market operator" has successfully passed the recertification for compliance of the quality management system with international quality management standards regarding the provision of services for the organisation of the purchase and sale of electricity and received a new ISO 9001:2015 certificate (ISO 9001:2015, IDT, "Quality Management System").

The certificate was issued on May 25, 2023 by the State enterprise "All-Ukrainian State Research and Production Centre for Standardisation, Metrology, Certification and Consumer Rights Protection".

As part of the implementation of the Law of Ukraine No. 3220-IX dated June 30, 2023 on the restoration and green transformation of the energy system of Ukraine, JSC "Market operator" discussed with the Ukrainian Wind Energy Association possible options for trading guarantees of origin.

JSC "Market operator" has successfully passed the annual external audit of PECB MS, accredited by the International Organization for Standardization (ISO), and obtained an international certificate of compliance of the Company's anticorruption policy with the requirements of ISO 37001.

The audit was supported by the USAID Energy Security Project (ESP) in Ukraine. JSC "Market operator" waived its right to choose an auditor by conducting a corresponding procurement of services and applied to USAID ESP for an annual certification.

The audit company AC Crowe Ukraine, a member of the international network Crowe Global, which is one of the 10 largest auditors in the world, completed the audit of JSC "Market operator" for 2022 on compliance with the provisions of the day-ahead market and intraday market Rules with a positive conclusion.

The auditors checked the submission of applications for the purchase and sale of electricity on the DAM and IDM by DAM and IDM participants, the correctness of determining the results of trading on the DAM and IDM and related charges, as well as the processes applied by "Market operator" to the data provided by the companies. In addition, the auditors tested the alternative software of JSC "Market operator" for its ability to manage spot market processes in accordance with the requirements of the DAM/IDM Rules.

29.05.2023

"MARKET OPERATOR"
HAS PASSED
ISO 9001:2015
RECERTIFICATION

02.08.2023

"MARKET OPERATOR"
DISCUSSED TRADING OF
GUARANTEES OF ORIGIN
WITH UWEA

12.09.2023

"MARKET OPERATOR"
CONFIRMED THE
COMPLIANCE OF ITS
ANTI-CORRUPTION
POLICY WITH
INTERNATIONAL ISO
STANDARDS

21.09.2023

AUDITORS CONFIRMED THE TRANSPARENCY OF THE WORK OF JSC "MARKET OPERATOR"





YEAR OF DAM AND IDM

The volume of electricity sales and purchases on the day-ahead market in 2023 increased by 13.97% to 20,750,401.9 MWh compared to 2022, but did not reach the pre-war level. Last year, the intraday market sold 38.51% less electricity than in 2022 – 1,657,236.6 MWh. The total cost of electricity purchased on the site of "Market operator" amounted to UAH 81,457.99 million (excluding VAT).

THE LARGEST VOLUME OF ELECTRICITY ON THE DAM PER DAY WAS PURCHASED ON MARCH 1, 2023 – **100,565.0** MWH, AND THE SMALLEST ON FEBRUARY 26, 2023 – **23,349.5** MWH

THE HIGHEST DAILY VOLUME OF ELECTRICITY ON THE IDM WAS PURCHASED ON JANUARY 15, 2023 – **24,627.5** MWH, AND THE LOWEST ON APRIL 25, 2023 – **300.7** MWH.

In December last year, the highest demand for electricity purchase on the DAM was recorded – 2,426,784.6 MWh, while the lowest was in September – 1,334,898.3 MWh. It is noteworthy that since September 2023, the volume of simple block and linked block bids has increased. The highest demand on the IDM was in January – 292,641.0 MWh, and the lowest in March – 81,134.2 MWh. Since July, the volumes of simultaneous sales on the DAM and purchases on the IDM have increased in the respective settlement periods by market participants, except for producers and sellers of electricity from energy storage facilities and green generation.

The index of the electricity price of the BASE period on the day-ahead market in the UES of Ukraine for 2023 is UAH 3,373.52/MWh, which is 26,30% higher than the same period in 2022. The weighted average price for the purchase and sale of electricity on the DAM increased by 29.30% compared to the previous year and amounts to UAH 3,617.60/MWh. On the intraday market, the weighted average price for 2023 is 43.95% higher than in 2022 - UAH 3,856.67/MWh.

THE MINIMUM VALUE OF THE DAM BASE LOAD PRICE INDEX WAS FIXED AT UAH 1,697.71/MWH ON DECEMBER 31, 2023, AND THE MAXIMUM VALUE WAS FIXED AT UAH 4,834.33/MWH ON OCTOBER 13, 2023.

THE MINIMUM WEIGHTED AVERAGE PRICE PER DAY ON THE DAM WAS SET ON DECEMBER 31, 2023 AT UAH **1,812.52**/MWH, AND THE MAXIMUM WEIGHTED AVERAGE PRICE PER DAY ON DECEMBER 7, 2023 AT UAH **5,690.52**/MWH.

According to the market concentration ratio*, the UES of Ukraine had a high level of concentration of electricity buyers on the DAM – on average, in 2023, the concentration level was 77%, and on the part of sellers – on average 74%.

*The market concentration ratio (C5) is the sum of the percentage of the market share of the first five participants with the largest sales/purchase volumes. The higher the value of this indicator, the higher the degree of concentration in the market and the weaker the competition.





KEY INDICATORS

OF DAM AND IDM FOR 2023



PRICE RESTRICTIONS CAPS

NEURC Resolution No. 1007 dated 31/05/2023 implemented limitations of minimum and maximum declared prices for the delivery day 01/07/2023 on DAM and IDM were suspended starting from 30/06/2023.

NEURC Resolution No. 1126 dated 27/06/2023: starting from 01/07/2023, restrictions on maximum declared prices for DAM and IDM were established:

restrictions on the minimum declared prices: UAH 10.00/MWh.

from 00:00 to 07:00 a.m. and from 11:00 p.m. to 24:00 – UAH 3,000.00/MWh;

from 07:00 a.m. to 07:00 p.m. – UAH 5,600.00/MWh;

from 07:00 p.m. to 11:00 p.m. – UAH 7,200.00/MWh;

NEURC Resolution No. 2099 dated **09/11/2023**: starting from **01/12/2023**, restrictions on maximum declared prices for DAM and IDM were established:

restrictions on the minimum declared prices: UAH 10.00/MWh.

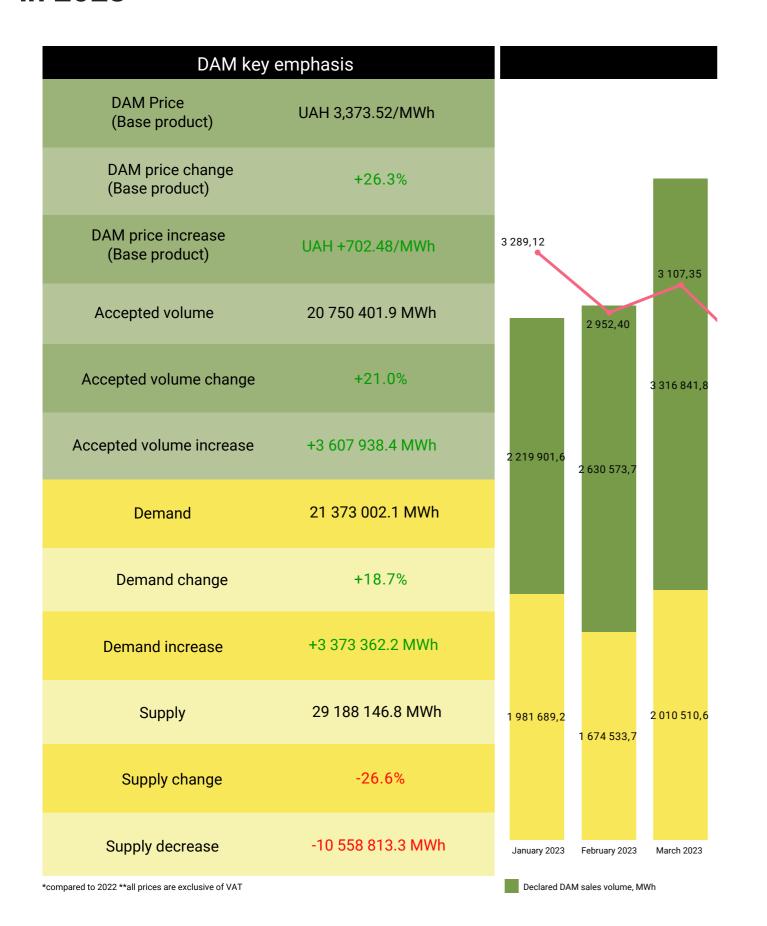
from 00:00 to 07:00 a.m. and from 11:0 p.m. to 24:00 – UAH 3.000.00/MWh:

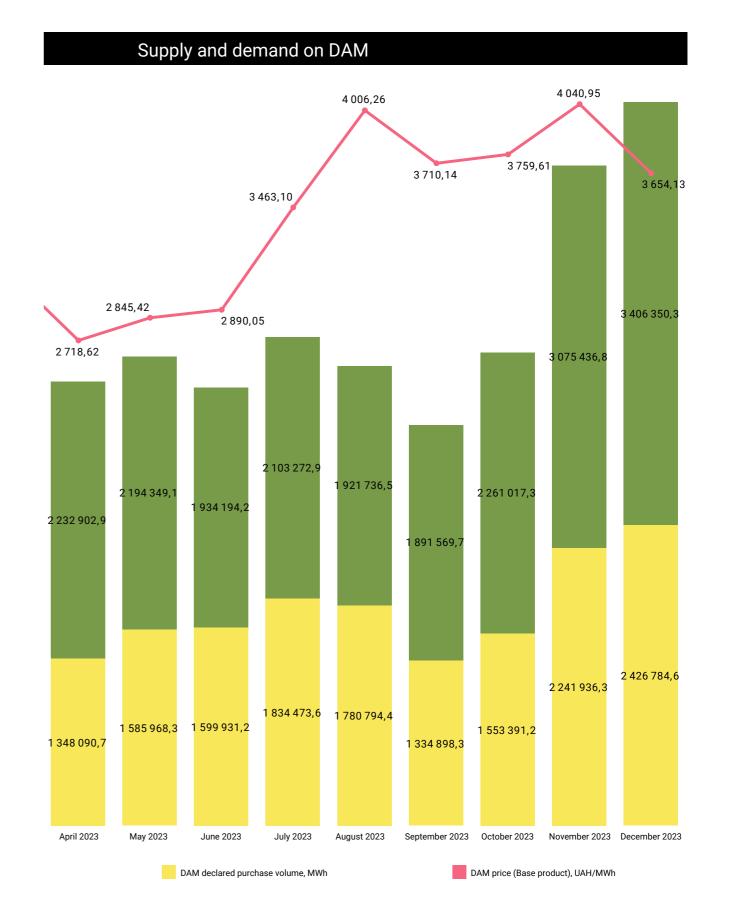
from 07:00 a.m. to 08:00 a.m. and from 11:00 a.m. to 05:00 p.m. – UAH 5,600.00/

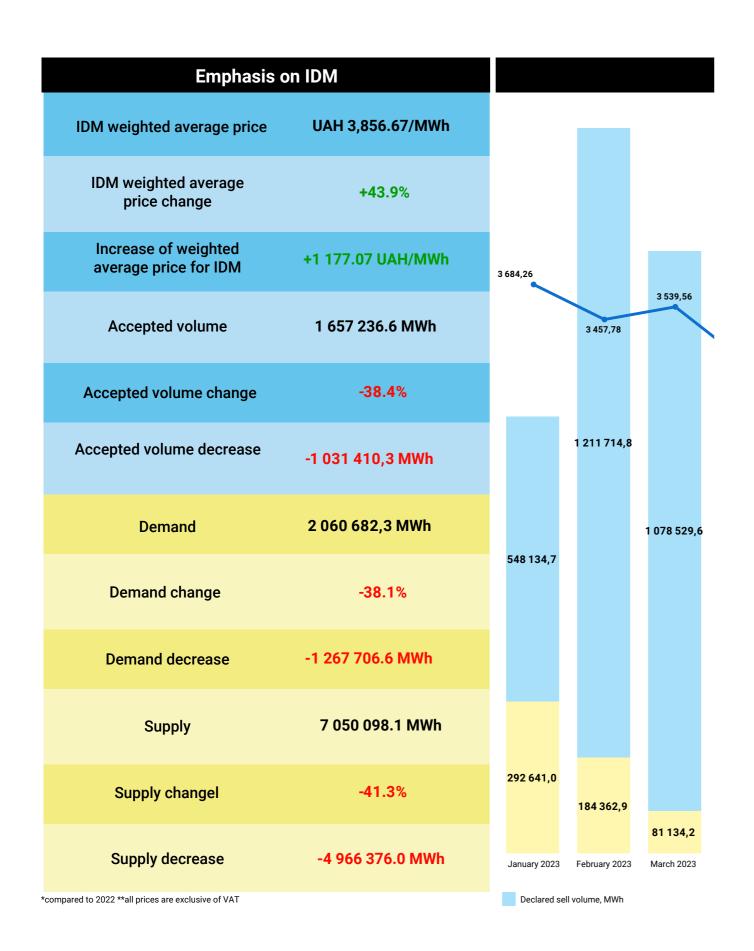
from 08:00 a.m. to 11:00 a.m. – UAF 6,900.00/MWh;

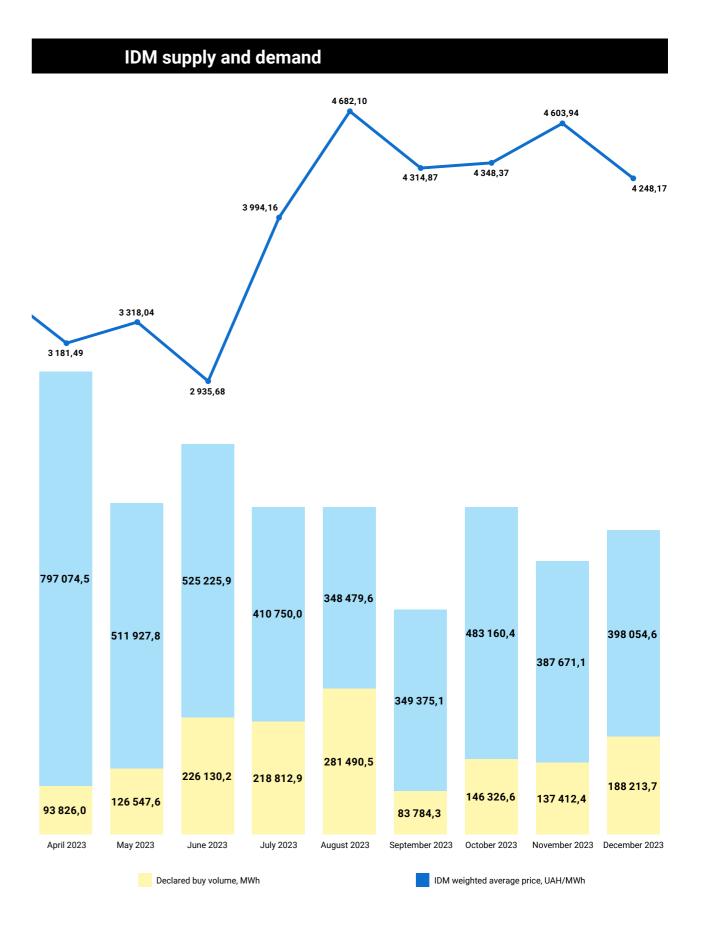
from 05:00 p.m. to 11:00 p.m. – UAF 7,500.00/MWh

* Before 30/06/2023 there were limitations on maximum and minimum prices undo NEURC Resolution No. 332 of 25/02/2022.







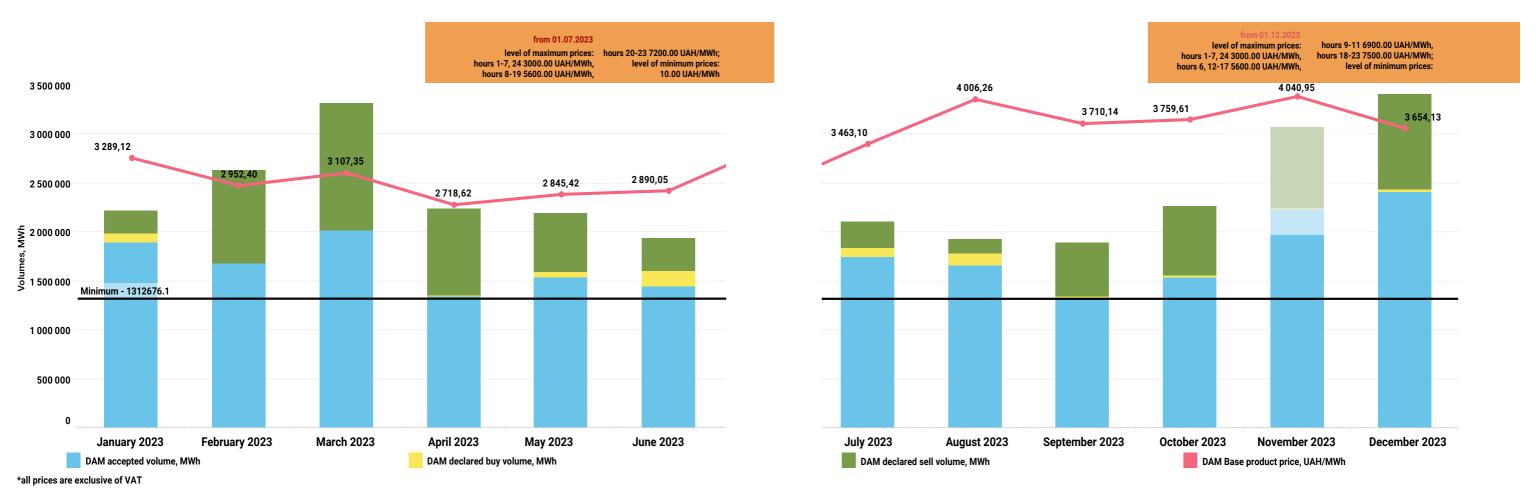


DAM prices, DAM accepted and declared volumes

DAM in 2023

The maximum DAM price (BASE product) was 4834,33 MWh as of 13/10/2023
The minimum DAM price (BASE product) was 1967,71 MWh as of 31/12/2023
The maximum accepted volume was 100 565,00 MWh as of 01/03/2023
The minimum accepted volume was 23 348 5 MWh as of 26/02/2023

Quarter	Month	DAM price (Base product), UAH/MWh	DAM accepted volume, MWh	DAM Base product price, MWh	DAM declared sell volume, MWh	Difference between DAM accepted and declared buy volume	Difference between DAM accepted and declared buy volume
	January 2023	3 289,12	1 891 695,1	1 981 689,2	2 219 901,6	-4.5%	-14.8%
Q1	February 2023	2 952,40	1 671 595,8	1 674 533,7	2 630 573,7	-0.2%	-36.5%
2023	March 2023	3 107,35	2 009 654,2	2 010 510,6	3 316 841,8	0.0%	-39.4%
	Quarter indicator	3 121,75	5 572 945,1	5 666 733,5	8 167 317,1	-1.7%	-31.8%
	April 2023	2 718,62	1 340 072,0	1 348 090,7	2 232 902,9	-0.6%	-40.0%
Q2	May 2023	2 845,42	1 526 057,5	1 585 968,3	2 194 349,1	-3.8%	-30.5%
2023	June 2023	2 890,05	1 437 843,9	1 599 931,2	1 934 194,2	-10.1%	-25.7%
	Quarter indicator	2 818,33	4 303 973,4	4 533 990,2	6 361 446,2	-5.1%	-32.3%
	July 2023	3 463,10	1 740 817,7	1 834 473,6	2 103 272,9	-5.1%	-17.2%
Q3	August 2023	4 006,26	1 654 762,7	1 780 794,4	1 921 736,5	-7.1%	-13.9%
2023	September 2023	3 710,14	1 312 676,1	1 334 898,3	1 891 569,7	-1.7%	-30.6%
	Quarter indicator	3 726,68	4 708 256,5	4 950 166,3	5 916 579,1	-4.9%	-20.4%
	October 2023	3 759,61	1 525 030,1	1 553 391,2	2 261 017,3	-1.8%	-32.6%
Q4	November 2023	4 040,95	2 228 934,8	2 241 936,3	3 075 436,8	-0.6%	-27.5%
2023	December 2023	3 654,13	2 411 262,0	2 426 784,6	3 406 350,3	-0.6%	-29.2%
	Quarter indicator	3 815,81	6 165 226,9	6 222 112,1	8 742 804,4	-0.9%	-29.5%
Ir	ndicator for the year	3 373,52	20 750 401,9	21 373 002,1	29 188 146,8	-2.9%	-28.9%



Prices, accepted and declared volumes on IDM

IDM in 2023:

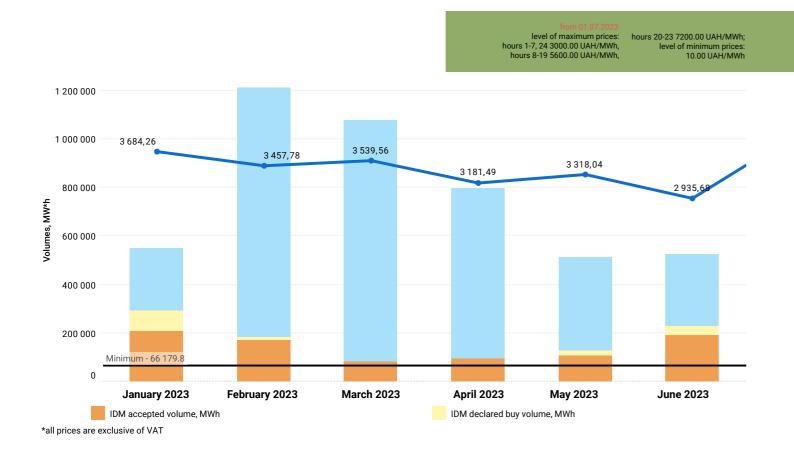
The IDM maximum weighted average price was 5690, 62 MWh as of 07/12/2023

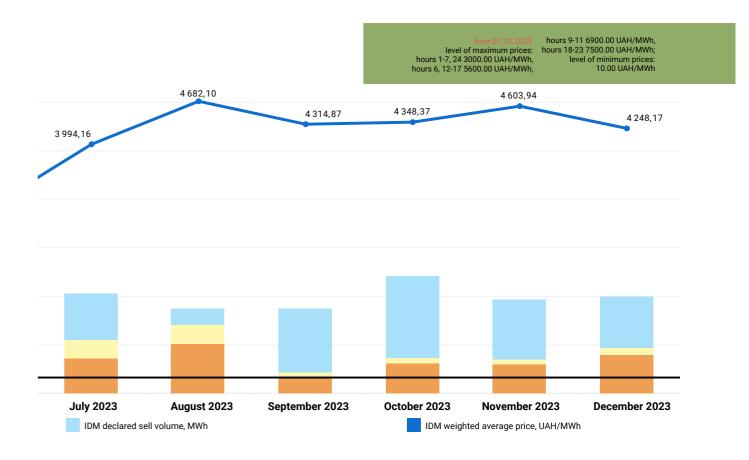
The IDM minimum weighted average price was 1812, $52\,\text{MWh}$ as of 31/12/2023

The maximum accepted volume was 24 627, 5 MWh as of 15/01/2023

The minimum accepted volume was 300, 7 MWh as of 25/04/2023

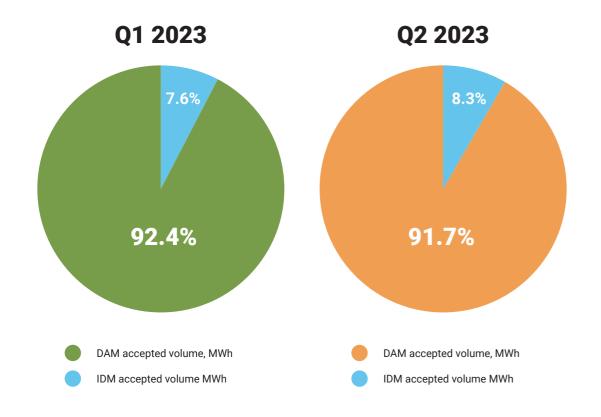
Quarter	Month	IDM weighted average price, UAH/MWh	IDM accepted volume, MWh	IDM declared buy volume, MWh	IDM declared sell volume, MWh	Difference between IDM accepted and declared buy volume	Difference between IDM accepted and declared sell volume	
	January 2023	3 684,26	206 788,3	292 641,0	548 134,7	-29.3%	-62.3%	
Q1	February 2023	3 457,78	171 576,3	184 362,9	1 211 714,8	-6.9%	-85.8%	
2023	March 2023	3 539,56	80 429,5	81 134,2	1 078 529,6	-0.9%	-92.5%	
	Quarter indicator	3 574,19	458 794,1	558 138,1	2 838 379,1	-17.8%	-83.8%	
	April 2023	3 181,49	93 484,1	93 826,0	797 074,5	-0.4%	-88.3%	
Q2 2023	May 2023	3 318,04	106 413,3	126 547,6	511 927,8	-15.9%	-79.2%	
2023	June 2023	2 935,68	191 835,5	226 130,2	525 225,9	-15.2%	-63.5%	
	Quarter indicator	3 098,21	391 732,9	446 503,8	1 834 228,2	-12.3%	-78.6%	
	July 2023	3 994,16	141 251,6	218 812,9	410 750,0	-35.4%	-65.6%	
Q3 2023	August 2023	4 682,10	205 103,0	281 490,5	348 479,6	-27.1%	-41.1%	
2023	September 2023	4 314,87	66 179,8	83 784,3	349 375,1	-21.0%	-81.1%	
	Quarter indicator	4 387,64	412 534,4	584 087,7	1 108 604,7	-29.4%	-62.8%	
	October 2023	4 348,37	120 496,7	146 326,6	483 160,4	-17.7%	-75.1%	
Q4 2023	November 2023	4 603,94	116 026,3	137 412,4	387 671,1	-15.6%	-70.1%	
2023	December 2023	4 248,17	157 652,2	188 213,7	398 054,6	-16.2%	-60.4%	
	Quarter indicator	4 383,53	394 175,2	471 952,7	1 268 886,1	-16.5%	-68.9%	
li	Indicator for the year	3 856,67	1 657 236,6	2 060 682,3	7 050 098,1	-19.6%	-76.5%	

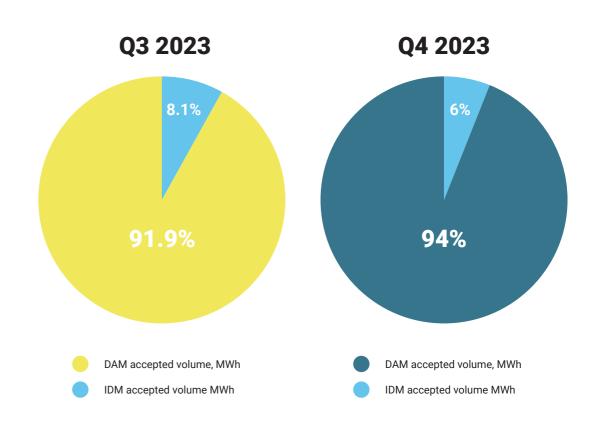




Allocation of accepted volume of electricity on DAM and IDM

Quarter	Month	Total volume, MWh	DAM accepted volume, MWh	DAM share in the total volume	Accepted volume for IDM, MWh	IDM share in the total volume
	January 2023	2 098 483,4	1 891 695,1	90.1%	206 788,3	9.9%
01	February 2023	1 843 172,1	1 671 595,8	90.7%	171 576,3	9.3%
Q1 2023	March 2023	2 090 083,7	2 009 654,2	96.2%	80 429,5	3.8%
	Indicator for the quarter	6 031 739,2	5 572 945,1	92.4%	458 794,1	7.6%
	April 2023	1 433 556,1	1 340 072,0	93.5%	93 484,1	6.5%
02	May 2023	1 632 470,8	1 526 057,5	93.5%	106 413,3	6.5%
Q2 2023	June 2023	1 629 679,4	1 437 843,9	88.2%	191 835,5	11.8%
	Indicator for the quarter	4 695 706,3	4 303 973,4	91.7%	391 732,9	8.3%
	July 2023	1 882 069,3	1 740 817,7	92.5%	141 251,6	7.5%
03	August 2023	1 859 865,7	1 654 762,7	89.0%	205 103,0	11.0%
Q3 2023	September 2023	1 378 855,9	1 312 676,1	95.2%	66 179,8	4.8%
	Indicator for the quarter	5 120 790,9	4 708 256,5	91.9%	412 534,4	8.1%
	October 2023	1 645 526,8	1 525 030,1	92.7%	120 496,7	7.3%
Q4	November 2023	2 344 961,1	2 228 934,8	95.1%	116 026,3	4.9%
2023	December 2023	2 568 914,2	2 411 262,0	93.9%	157 652,2	6.1%
	Indicator for the quarter	6 559 402,1	6 165 226,9	94.0%	394 175,2	6.0%
lr	ndicator for the year	22 407 638,5	20 750 401,9	92.6%	1 657 236,6	7.4%





Difference between DAM declared sell and buy volumes, MWh

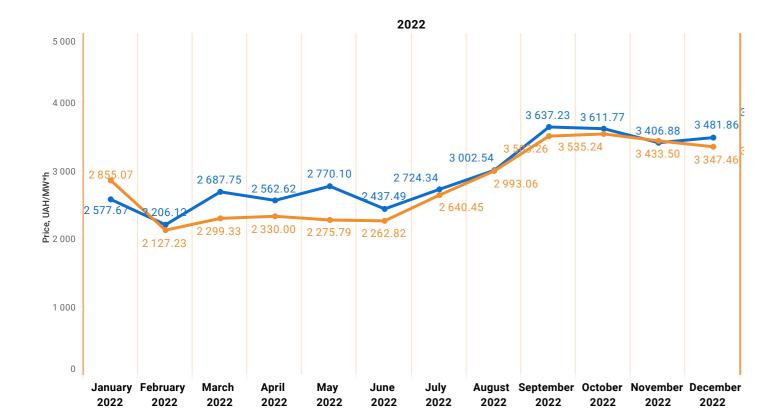
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23	33 617	37 167	42 756	44 977	44 635	41 119	29 124	40 634	34 449	40 923	49 003	51 675	54 920	52 403	45 640	37 809	35 060	28 501	27 506	31 850	33 360	38 934	49 758	
arch 023	55 535	60 545	66 014	68 718	67 082	63 368	52 595	52 713	49 880	49 642	52 188	57 148	62 569	64 259	65 314	64 758	59 555	51 204	37 817	33 107	35 470	41 327	51 087	
pril 023	33 512	37 240	42 939	46 206	46 031	42 633	36 131	31 896	32 394	31 342	37 129	46 116	51 337	53 225	52 131	48 420	44 401	42 132	30 132	17 779	12 922	15 805	24 070	
May 2023	5 358	14 541	21 027	22 910	21 897	18 101	10 601	16 230	23 272	32 271	45 283	60 729	69 842	69 185	65 606	59 637	35 363	27 721	8 770	1 063	-3 037	-10 525	-3 775	
lune 023	-24 461	-7 159	-281	1354	1 883	-710	-11 286	13 483	14 820	22 812	34 462	56 049	67 708	66 821	56 923	43 883	22 427	15 863	7 279	3 2 7 4	4 456	-5 637	-7 841	
July	-12 664	1 283	7 485	10 128	10 559	7 310	167	13 031	14 591	18 299	27 588	34 515	40 382	39 064	35 414	26 673	15 166	5 494	3 233	4072	3 611	-4 635	-4 121	
2023 Jugust	-11 225	-3 396	3 377	6 144	6 480	2 222	-4 458	10 386	10 822	16 163	20 354	27 756	32 137	29 015	25 671	21 060	15 480	4203	-10 942	-10 183	-9 152	-14 715	-3 059	
2023 tember	16 546	20 185	24 963	27 470	27 534	23 173	15 714	12 962	15 477	24 192	34 576	45 086	51 881	50 759	43 405	29 803	20 848	10 609	3 136	8 410	4465	13 496	21 045	
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ember 023	20 687	29 257	38 149	44 567	46 113	44 349	36 003	37 972	30 583	31 002	36 460	40 548	45 305	39 688	32 896	25 919	16 314	9 973	17 245	27 955	36 452	44 873	57 359	
ember 023	45 009	53 327	63 242	68 120	67 969	61 988	48 874	43 656	36 961	29 188	35 295	35 669	39 611	34 447	27 015	22 872	19 551	24 139	28 503	31 797	33 556	41 891	49 773	
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022	75 005	91 629	95 977	100 801	100 583	93 140	77 616	93 464	81 912	82 863	93 384	102 983	109 469	106 466	100 272	91 667	75 874	59 355	52 047	57 979	65 783	74 244	88 104	
larch 022	116 263	124 600	124 727	120 751	129 036	127 012	124 029	175 004	190 507	208 946	224 875	234 321	236 326	233 110	222 223	205 299	183 044	158 295	144 487	142 164	145 260	152 151	160 676	
pril 022	100 627	114 397	123 227	136 009	132 735	120 823	98 855	290 630	285 957	275 127	285 986	304 414	317 013	319 036	318 004	318 831	308 983	288 451	260 090	254 893	250 962	252 271	275 141	
lay)22	52 880	61 745	63 832	66 562	68 360	62 278	59 378	87 456	101 989	118 675	135 425	144 102	148 325	145 805	139 911	129 297	114 115	100 845	94 397	91 070	83 521	78 867	88 825	
June 022	54 333	60 795	63 750	68 352	71 123	64 994	63 041	84 025	96 578	111 799	128 990	138 321	142 321	139 621	133 172	123 459	107 626	90 350	86 380	80 890	80 575	72 394	77 906	
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022 igust	5677	16.460	15 801	18 853	18 7/17	17 526	6.606	18 810	26 /102	41 393	50 080	70 463	79.048	75 953	68 534	55 487	38 363	30 57/	16 8/11	15 //01	13 602	12 173	17 001	
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022 ember	2143	13 250	13 960	16 489	16 848	12 015	-3 129	6 299	213	11 024	31 985	47 682	59 112	60 883	52 942	37 070	21 611	9 300	2 459	-6 215	-1 937	6 463	9 933	
vember 022	5 324	9 037	14 674	18 075	17 793	15 460	5756	23 009	20 749	25 751	30 856	35 018	36 367	29 357	20 512	9 699	10 628	10 840	13 760	16 606	17 955	20 465	20 429	
ember	4 956	11 958	18 519	21 826	22 087	17 947	5 322	19 304	12 739	18 825	26 752	33 402	35 469	28 347	19 589	12 828	9 585	12 168	16 373	17 449	18 028	21 408	22 469	

Difference between IDM declared sell and buy volumes, MWh

ι	JES of L	Jkraine i	in 2023	3											the declare	ed sell volu	me exceed	ls the decla	ared buy vo	lume						
	Date	1	2	3	4	5	6	7	8	g	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	January	2 822	7 980	17 052	22 753	22 502	19 689	4 887	12 710	9 843	15 055	19 509	25 024	27 109	19 095	10 160	7 618	6 961	4 466	4 226	4 041	1 779	2 977	2 647	-15 410	20
123	2023 February																									
Q1 2023	2023	34 331	39 948	46 707	48 876	48 379	45 891	30 525	43 234	39 859	47 359	51 941	53 859	57 164	55 276	49 060	41 188	37 677	32 535	31 684	33 170	33 479	39 398	53 947	31 868	
	March 2023	51 629	49 815	53 930	56 263	53 771	50 041	42 092	40 336	36 508	37 072	36 044	38 811	42 368	45 485	47 018	45 857	42 432	35 885	26 628	26 799	28 533	30 705	40 452	38 922	
	April 2023	23 497	19 904	21 331	23 093	23 445	24 191	22 871	27 306	30 707	31 672	33 067	37 913	43 014	44 540	42 038	39 060	35 896	36 071	30 793	20 951	18 810	21 981	27 032	24 066	
Q2 2023	May 2023	2 067	5 049	7 270	8 209	7 787	8 129	5 834	10 460	14 326	21 102	29 301	39 497	45 409	44 725	42 422	36 968	20 908	11 603	7 901	5 952	5 196	3 728	3 731	-2 192	
0	June 2023	-5 952	-1 745	1 089	1 334	827	967	-2 371	8 752	9 534	19 286	27 061	39 447	47 336	46 359	39 495	27 946	14 479	10 899	5 019	4 196	5 503	3 664	2 974	-7 004	
	July 2023	-1 453	866	4 388	6 642	6 576	4 519	433	7 274	8 241	11 517	19 568	26 566	31 412	27 047	23 109	15 196	4 001	-615	-445	2 910	2 251	-1 140	1 210	-8 135	
Q3 2023		202	1 029	2 209	2 993	2 949	1 505	-788	1 681	3 020	5 695	8 706	12 998	16 976	10 969	9 858	5 599	1 427	-1 301	-4 915	-2 884	-1 467	-1 899	435	-8 007	
03	2023 September	5 499	5 589	5 927	8 387	8 786	7 552	3 565	5 084	5 736	10 037	17 176	26 227	32 919	32 845	24 478	13 372	7 801	6 659	4 084	5 952	4 452	6 021	13 506	3 928	
	2023 October																									140
23	2023	5 736	7 565	10 916	14 561	13 625	13 017	7 826	9 601	8 257	8 893	19 260	27 729	35 715	34 918	25 432	12 873	8 509	4 487	4 662	13 275	9 090	11 016	24 868	4 863	142
Q4 2023	November 2023	7 428	8 586	12 298	14 071	14 794	11 338	8615	10 075	7 235	13 016	8 550	10 528	11 578	9 321	8 737	7 175	4 768	4 272	6 579	13 827	14 050	14 863	25 124	3 432	
	December 2023	3 235	5 244	7 715	10 262	8 643	6 583	3 968	6 383	6 958	6 991	8 047	9 737	12 707	11 284	9 645	7 380	6 492	8 407	9361	12 360	14 497	13 381	14 147	6416	
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	JES of L	JKraine	III 2022	_																						
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		9 635	2 15 250	3 20 944	4 21 991	5 22 836	6 20 267	7 15 258	8 24 155	9 17 218	10 10 276	11 13 366	12 15 657	13 21 025	14 16 222	15 15 474	16 18 027	17 10 364	18 7 300	19 12 483	20 17 936	21 24 196	22 19 672	23 27 752	24 8 250	25
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Q1 2022	Date January 2022 February 2022 March 2022	9 635 25 664 41 316 16 246	2 15 250 38 251 44 214 16 872	3 20 944 48 209 40 327 15 892	50 198 39 708 17 413	50 274 40 606 17 249	41 383 40 721 16 447	28 655 43 758 18 398	42 045 56 923 44 855	33 824 62 675 46 666	10 276 37 009 66 736 56 521	13 366 47 714 67 131 65 531	15 657 56 583 66 099 68 561	21 025 56 590 63 660 67 522	48 916 61 517 66 146	15 474 42 474 59 589 62 316	18 027 38 821 57 902 57 779	10 364 32 546 56 692 51 699	7 300 39 084 48 571 44 574	12 483 33 041 41 977 41 374	17 936 26 972 40 801 37 403	24 196 33 978 42 842 35 632	19 672 34 425 44 388 34 729	27 752 34 441 48 033 36 943	8 250 18 971 43 147 16 988	25
2022	Date Canuary 2022 February 2022 March 2022 April 2022 May 2022	9 635 25 664 41 316 16 246	2 15 250 38 251 44 214 16 872	3 20 944 48 209 40 327 15 892	50 198 39 708 17 413	50 274 40 606 17 249	41 383 40 721 16 447	28 655 43 758 18 398	42 045 56 923 44 855	33 824 62 675 46 666	10 276 37 009 66 736 56 521	13 366 47 714 67 131 65 531	15 657 56 583 66 099 68 561	21 025 56 590 63 660 67 522	48 916 61 517 66 146	15 474 42 474 59 589 62 316	18 027 38 821 57 902 57 779	10 364 32 546 56 692 51 699	7 300 39 084 48 571 44 574	12 483 33 041 41 977 41 374	17 936 26 972 40 801 37 403	24 196 33 978 42 842 35 632	19 672 34 425 44 388 34 729	27 752 34 441 48 033 36 943	8 250 18 971 43 147 16 988	25
2022 Q1 2022	Date Canuary 2022 February 2022 March 2022 April 2022 May 2022 June 2022	1 9 635 25 664 41 316 16 246 15 960	2 15 250 38 251 44 214 16 872 21 470	3 20 944 48 209 40 327 15 892 22 320	50 198 39 708 17 413 24 180	50 274 40 606 17 249 24 276	41 383 40 721 16 447 21 442	28 655 43 758 18 398 20 468	42 045 56 923 44 855 35 377	33 824 62 675 46 666 52 333	10 276 37 009 66 736 56 521 72 594	13 366 47 714 67 131 65 531 90 378	15 657 56 583 66 099 68 561 100 935	21 025 56 590 63 660 67 522 105 094	48 916 61 517 66 146 102 346	15 474 42 474 59 589 62 316 95 429	18 027 38 821 57 902 57 779 84 272	10 364 32 546 56 692 51 699 67 798	7 300 39 084 48 571 44 574 47 314	12 483 33 041 41 977 41 374 27 180	17 936 26 972 40 801 37 403 25 411	24 196 33 978 42 842 35 632	19 672 34 425 44 388 34 729 19 573	27 752 34 441 48 033 36 943 20 669	8 250 18 971 43 147 16 988 10 871	25
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Q2 2022 Q1 2022	Date Canuary 2022 February 2022 March 2022 April 2022 May 2022 June 2022 July 2022 August	1 9 635 25 664 41 316 16 246 15 960 23 622 7 664 7 256	2 15 250 38 251 44 214 16 872 21 470 35 628 16 240 19 192	3 20 944 48 209 40 327 15 892 22 320 32 396 15 058 18 670	50 198 39 708 17 413 24 180 35 364 18 466 21 251	50 274 40 606 17 249 24 276 35 565 19 355	41 383 40 721 16 447 21 442 33 115 17 728 19 147	28 655 43 758 18 398 20 468 33 867 13 966 8 462	42 045 56 923 44 855 35 377 52 157 31 886 18 819	33 824 62 675 46 666 52 333 64 602 46 142 23 427	10 276 37 009 66 736 56 521 72 594 80 690 63 296	13 366 47 714 67 131 65 531 90 378 99 758 80 700 55 908	15 657 56 583 66 099 68 561 100 935 111 279 90 859 64 360	21 025 56 590 63 660 67 522 105 094 116 313 93 894	48 916 61 517 66 146 102 346 113 099 90 617 67 671	15 474 42 474 59 589 62 316 95 429 105 631 84 610 61 225	18 027 38 821 57 902 57 779 84 272 94 179 73 539 48 299	10 364 32 546 56 692 51 699 67 798 76 899 59 981 32 332	7 300 39 084 48 571 44 574 47 314 56 399 39 989 22 788	12 483 33 041 41 977 41 374 27 180 37 464 25 479 14 601	17 936 26 972 40 801 37 403 25 411 29 129 18 393 16 857	24 196 33 978 42 842 35 632 21 811 26 568 15 365	19 672 34 425 44 388 34 729 19 573 24 282 14 476 14 895	27 752 34 441 48 033 36 943 20 669 21 183 15 026	8 250 18 971 43 147 16 988 10 871 17 469 2 057 -374	25
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2022 Q2 2022 Q1 2022	Date Ganuary 2022 February 2022 March 2022 April 2022 May 2022 June 2022 July 2022 August 2022 September 2022	1 9 635 25 664 41 316 16 246 15 960 23 622 7 664 7 256 2 184	2 15 250 38 251 44 214 16 872 21 470 35 628 16 240 19 192 7 816 6 689	3 20 944 48 209 40 327 15 892 22 320 32 396 15 058 18 670 8 024 8 799	50 198 39 708 17 413 24 180 35 364 18 466 21 251 10 298 11 993	50 274 40 606 17 249 24 276 35 565 19 355 21 536 10 539	41 383 40 721 16 447 21 442 33 115 17 728 19 147 6 919 6 960	28 655 43 758 18 398 20 468 33 867 13 966 8 462 358 -3 549	42 045 56 923 44 855 35 377 52 157 31 886 18 819 5 101 2 208	33 824 62 675 46 666 52 333 64 602 46 142 23 427 6 477 1 820	10 276 37 009 66 736 56 521 72 594 80 690 63 296 37 825 11 845	13 366 47 714 67 131 65 531 90 378 99 758 80 700 55 908 17 353 15 660	15 657 56 583 66 099 68 561 100 935 111 279 90 859 64 360 22 412 25 777	21 025 56 590 63 660 67 522 105 094 116 313 93 894 71 547 28 180 35 343	48 916 61 517 66 146 102 346 113 099 90 617 67 671 25 509 33 364	15 474 42 474 59 589 62 316 95 429 105 631 84 610 61 225 20 784 24 338	18 027 38 821 57 902 57 779 84 272 94 179 73 539 48 299 12 214 12 866	10 364 32 546 56 692 51 699 67 798 76 899 59 981 32 332 6 156 1 244	7 300 39 084 48 571 44 574 47 314 56 399 39 989 22 788 3 808	12 483 33 041 41 977 41 374 27 180 37 464 25 479 14 601 2 370 -999	17 936 26 972 40 801 37 403 25 411 29 129 18 393 16 857 2 427 -2 054	24 196 33 978 42 842 35 632 21 811 26 568 15 365 16 185 646	19 672 34 425 44 388 34 729 19 573 24 282 14 476 14 895 2 628 1 189	27 752 34 441 48 033 36 943 20 669 21 183 15 026 16 717 4 741 1 447	8 250 18 971 43 147 16 988 10 871 17 469 2 057 -374 -556 -10 711	

the declared buy volume exceeds the declared sell volume

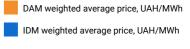
Comparison of DAM and IDM weighted average price in the UES of Ukraine



Average hourly difference between the prices on DAM and IDM, UAH/MW*h



^{*}all prices are exclusive of VAT



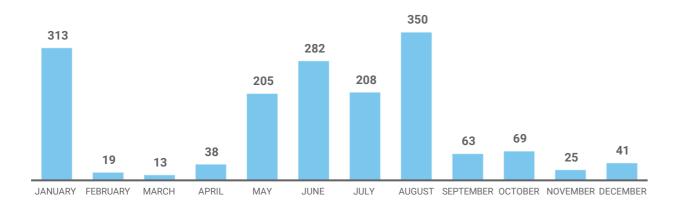


Yellow - DAM price higher that IDM price Blue - DAM price lower than IDM price

13	14	15	16	17	18	19	20	21	22	23	24	25
-23,63	-22,39	-17,39	-11,55	-10,81	-11,86	-13,89	-14,52	-14,48	-19,42	-23,59	-2,28	
-63,68	-64,30	-63,48	-61,81	-67,06	-57,76	-59,80	-61,62	-64,99	-62,52	-61,03	-13,58	
-64,91	-65,23	-66,60	-65,40	-66,29	-58,02	-47,55	-42,01	-44,46	-57,58	-64,36	-28,69	
-50,31	-50,19	-48,68	-45,73	-47,42	-42,04	-39,77	-38,64	-40,52	-45,97	-49,28	-14,74	
-58,59	-58,06	-57,98	-59,47	-60,07	-61,55	-59,73	-46,21	-38,40	-48,04	-61,50	-28,63	
-52,93	-52,93	-52,93	-52,93	-52,06	-41,95	-25,05	-17,26	-15,82	-7,27	-13,38	-7,59	
-49,72	-71,76	-49,74	-58,16	-39,81	-28,86	-14,30	-13,45	-13,35	-7,12	-5,29	0,00	
-53,74	-60,83	-53,54	-56,81	-50,66	-44,10	-32,94	-25,55	-22,45	-20,66	-26,58	-12,02	
-17,92	-35,34	-13,71	-145,04	-76,45	-51,32	-37,29	5,47	-1,81	26,60	7,12	0,08	
-1,84	-25,19	-48,57	-83,50	-8,53	-1,96	-5,53	26,22	14,90	3,84	10,78	0,11	
30,75	39,25	23,29	9,92	15,19	23,87	12,71	17,56	62,90	48,23	35,08	18,95	
3,37	-7,60	-13,39	-73,77	-23,68	-10,17	-10,28	16,40	24,93	25,99	17,47	6,24	
26,33	33,56	15,97	17,83	20,60	10,59	10,86	23,39	27,46	51,56	123,21	18,67	20,89
3,07	3,86	12,46	13,06	11,42	3,24	2,57	28,34	153,60	73,28	66,22	6,82	
26,88	39,67	31,68	36,05	52,55	68,96	59,45	53,85	74,14	64,20	50,95	19,97	
18,93	25,94	20,12	22,41	28,37	27,87	24,53	35,27	84,33	62,90	80,28	15,24	20,89

WERE IN THE RANGE OF 95% TO 100% OF THE MAXIMUM MARGINAL PRICES IN JANUARY-DECEMBER 2023

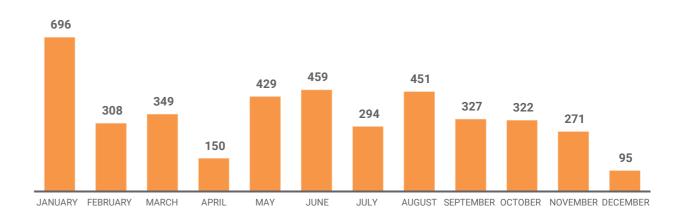
DAM prices were formed at the level of the maximum marginal prices during January - December 2023



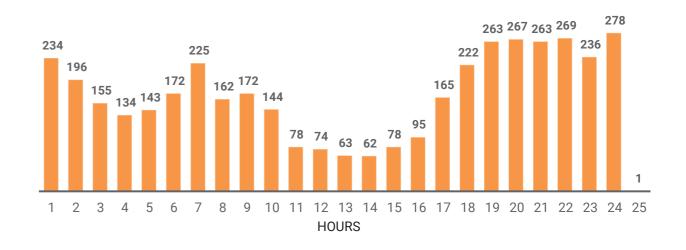
DAM prices were formed at the level of the maximum marginal prices by hour



Prices resulting from trading on DAM were formed at the level of >=95% of the maximum marginal prices during January - December 2023

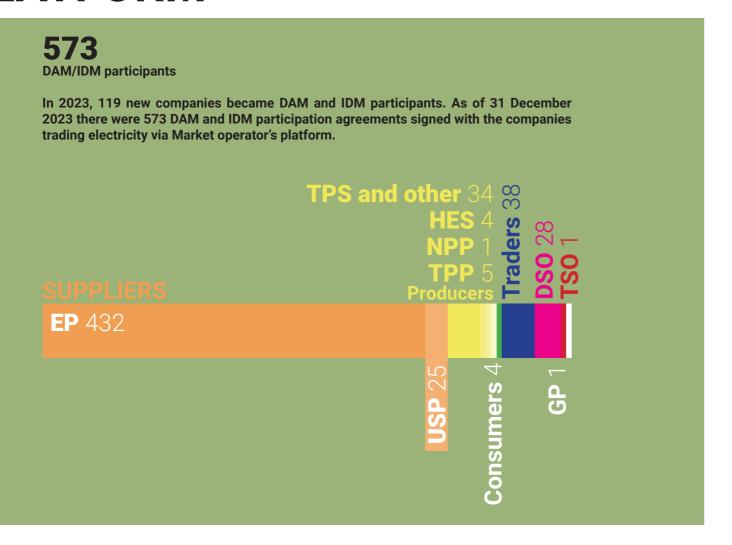


Prices resulting from trading on the DAM were formed at the level of >=95% of the maximum marginal prices by hour



WHO TRADED ELECTRICITY THOUGH

MARKET OPERATOR'S PLATFORM



Total number of DAM/IDM participants*

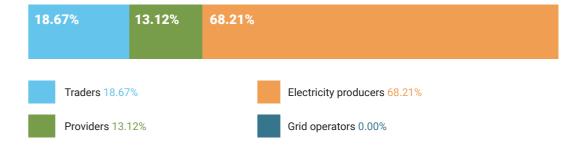


Total number of DAM/IDM participants with active status**



^{*} Total number of DAM/IDM participants, agreements on DAM/IDM participation, that were in force during settlement month

DAM sell volumes structure



DAM buy volumes structure



IDM sell volumes structure



IDM buy volumes structure



^{**} Total number of DAM/IDM participants, without the participants that were suspended from DAM/IDM participation during settlement month

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Accepted volume share in the DAM declared sell volume

Indicator	January 2023	February 2023	March 2023	April 2023	May 2023	June 2023	July 2023	August 2023	September 2023	October 2023	November 2023	December 2023
Electricity producers	84.8%	61.4%	58.1%	55.8%	67.7%	75.0%	80.4%	83.2%	55.3%	54.6%	62.7%	60.0%
Grid operators	85.9%	28.2%	100.0%	74.5%		38.4%	74.8%			56.1%		
Providers	99.6%	82.8%	99.0%	81.2%	78.0%	71.5%	84.4%	93.3%	97.5%	97.2%	96.7%	95.0%
Traders	87.0%	74.1%	92.9%	88.4%	76.0%	72.5%	86.1%	89.6%	79.6%	81.7%	92.4%	94.1%

Accepted volume share in the DAM declared buy volume

Indicator	January 2023	February 2023	March 2023	April 2023	May 2023	June 2023	July 2023	August 2023	September 2023	October 2023	November 2023	December 2023
Electricity producers	96.3%	99.6%	99.6%	99.6%	97.0%	89.1%	97.0%	93.0%	95.6%	99.5%	99.9%	98.1%
Grid operators	96.0%	99.9%	100.0%	99.5%	97.0%	91.6%	92.1%	90.8%	94.7%	94.9%	96.6%	97.1%
Providers	95.3%	99.8%	99.9%	99.4%	96.1%	89.6%	95.2%	93.2%	98.8%	98.7%	99.7%	99.6%
Traders	95.7%	99.9%	100.0%	99.6%	97.2%	92.7%	96.3%	92.1%	97.4%	99.3%	98.7%	100.0%

Accepted volume share in the IDM declared sell volume

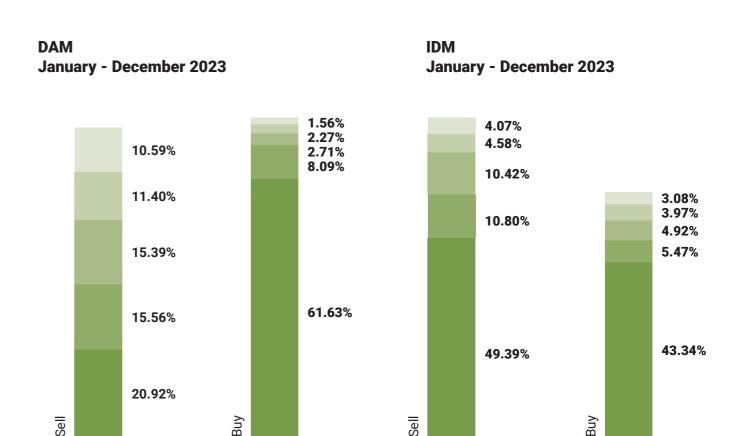
Indicator	January 2023	February 2023	March 2023	April 2023	May 2023	June 2023	July 2023	August 2023	September 2023	October 2023	November 2023	December 2023
Electricity producers	40.2%	14.5%	7.8%	12.5%	23.9%	47.3%	46.6%	68.8%	26.9%	33.5%	37.6%	42.0%
Grid operators	58.3%	21.6%	32.2%	2.5%		47.6%	84.5%	100.0%	41.9%		86.5%	31.1%
Providers	29.0%	8.3%	3.0%	5.1%	20.4%	20.6%	45.4%	46.1%	22.1%	17.9%	18.1%	37.2%
Traders	24.0%	15.0%	0.5%	3.0%	6.3%	4.3%	9.0%	24.3%	3.7%	6.1%	6.7%	10.0%

Accepted volume share in the DAM declared buy volume

Indicator	January 2023	February 2023	March 2023	April 2023	May 2023	June 2023	July 2023	August 2023	September 2023	October 2023	November 2023	December 2023
Electricity producers	94.5%	72.4%	95.5%	100.0%	70.6%	64.3%	56.8%	64.0%	69.8%	81.6%	89.0%	65.2%
Grid operators	83.1%	99.3%	100.0%	100.0%	81.2%	71.9%	80.4%	93.9%	90.5%	86.3%	87.3%	88.2%
Providers	69.2%	97.3%	99.8%	99.6%	86.5%	88.6%	63.5%	72.0%	78.3%	84.7%	82.1%	84.3%
Traders	92.0%	96.1%	100.0%	100.0%	87.2%	86.2%	75.9%	68.5%	91.7%	72.2%	95.3%	88.7%

SHARE OF BUY AND SELL VOLUMES OF THE FIVE

LARGEST PARTICIPANTS IN THE DAM AND IDM





COMPARISON WITH THE EU PRICES



^{*}Calculated under Central European Time (CET) zone

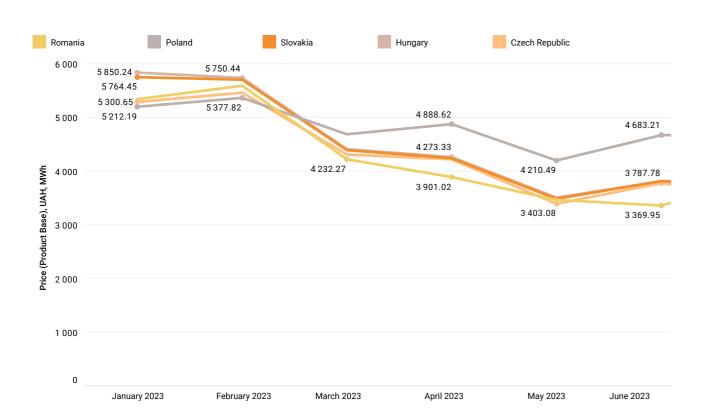


^{**}all prices are exclusive of VAT

Europe 2023

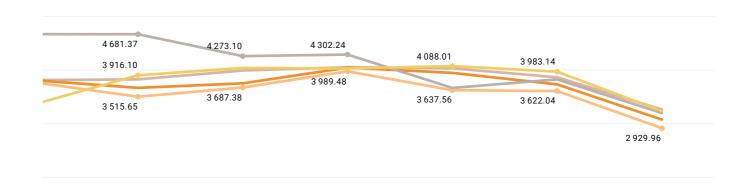
DAM price: Ukraine, Romania, Slovakia, Hungary and Poland, UAH/MWh

				2023			
Quarter	Month	Romania	Poland	Slovakia	Hungary	Czech Republic	Romania
	January 2023	5 354.34	5 212.19	5 764.45	5 850.24	5 300.65	6 559.42
Q1 2023	February 2023	5 604.58	5 377.82	5 717.30	5 750.44	5 475.07	5 895.15
	March 2023	4 232.27	4 699.43	4 403.23	4 420.09	4 321.74	4 159.94
	April 2023	3 901.02	4 888.62	4 252.91	4 273.33	4 231.76	3 468.22
Q2 2023	May 2023	3 475.88	4 210.49	3 495.62	3 518.19	3 403.08	2 928.68
	June 2023	3 369.95	4 683.21	3 825.60	3 825.42	3 787.78	2 858.91
	July 2023	3 916.10	4 681.37	3 681.46	3 839.25	3 515.65	3 462.10
Q3 2023	August 2023	4 053.89	4 273.10	3 765.44	4 004.90	3 687.38	3 560.91
	September 2023	4 042.15	4 302.24	4 057.69	4 066.78	3 989.48	3 713.80
	October 2023	4 088.01	3 680.15	3 960.78	4 045.65	3 637.56	4 270.09
Q4 2023	November 2023	3 983.14	3 838.99	3 746.16	3 878.28	3 622.04	4 670.57
	December 2023	3 247.86	3 211.70	3 089.42	3 276.92	2 929.96	3 910.44
Indicat	or for the quarter	4 096.52	4 413.56	4 135.64	4 218.97	3 980.50	4 111.80



Day			(day = hours 8-19, day = hours 1-7, 20-24				Night		
	Poland	Slovakia	Hungary	Romania	Romania	Poland	Slovakia	Hungary	Romania	
	5 755.35	6 615.90	6 768.82	6 080.05	4 149.27	4 669.03	4 913.01	4 931.65	4 521.26	
	5 624.25	6 015.02	6 067.83	5 809.39	5 314.01	5 131.40	5 419.58	5 433.05	5 140.76	
	4 698.83	4 499.67	4 522.58	4 413.36	4 304.80	4 700.03	4 306.52	4 317.32	4 229.87	
	4 736.28	3 972.57	3 986.41	3 951.40	4 333.83	5 040.96	4 533.24	4 560.26	4 512.12	
	3 919.22	2 985.20	2 996.00	2 915.67	4 023.09	4 501.77	4 006.04	4 040.38	3 890.49	
	4 512.42	3 313.08	3 312.56	3 263.67	3 880.99	4 853.99	4 338.13	4 338.27	4 311.89	
	4 480.43	3 228.69	3 314.22	3 113.07	4 370.10	4 882.30	4 134.23	4 364.28	3 918.22	
	4 119.36	3 360.57	3 515.01	3 304.57	4 546.87	4 426.83	4 170.31	4 494.80	4 070.19	
	4 118.16	3 742.22	3 745.26	3 661.50	4 370.50	4 486.32	4 373.15	4 388.31	4 317.45	
	3 860.44	4 146.76	4 220.07	3 821.45	3 906.42	3 500.36	3 775.30	3 871.70	3 454.15	
	4 356.60	4 426.71	4 552.38	4 205.18	3 295.70	3 321.38	3 065.60	3 204.18	3 038.90	
	3 754.05	3 700.23	3 961.29	3 455.44	2 585.28	2 669.34	2 478.60	2 592.56	2 404.48	
	4 486.03	4 155.36	4 235.71	3 987.20	4 081.23	4 341.09	4 115.92	4 202.22	3 973.80	

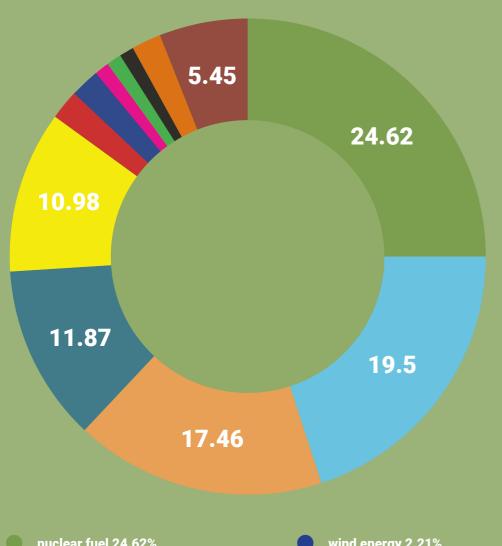
*Calculated in Central European Time (CET) **all prices are exclusive of VAT



 July 2023
 August 2023
 September 2023
 October 2023
 November 2023
 December 2023

ENVIRONMENTAL **ASPECTS**

Electricity sold on the day-ahead and intra-day markets in 2023 was generated from:



- nuclear fuel 24.62%
- hydropower 19.5%
- natural gas 17.46%
- solar energy 11.87%
- coal 10.98%
- **fuel oil 2.68%**

- wind energy 2.21%
- iogas 1.26%
- biomass 1%
- industrial gas 0.21%
- The origin of source has not
- unknown due to the failure of some market participants to provide

TARIFF POLICY

Starting from January 1, 2023, the tariff for the purchase and sale of electricity on the day-ahead and intraday markets was UAH 7.61/MWh (excluding VAT) (in accordance with the decision of the National Energy and Utilities Regulatory Commission of 19/12/2022, Resolution No. 1690).

The fixed payment for using the software of "Market operator" from January 1, 2023 was UAH 3,831.66 (excluding VAT).

The fixed payment for participation in the DAM and the IDM is a targeted monthly payment for services to support and provide the right to use the software of "Market operator". The payment for purchase and sale transactions on the DAM and IDM is paid by buyers and sellers of electricity on a daily basis based on the results of the trades. The amount depends on the volume of electricity purchased and sold on the DAM and IDM and the tariff for electricity purchase and sale on the DAM/IDM, which is approved by the NEURC.

The new tariff for the purchase and sale of electricity on the day-ahead and intraday markets came into force on the day of delivery on September 29, 2023, at UAH 4.32 per MWh (excluding VAT). This is 43% lower than the current tariff. The relevant decision was made by the National Energy and Utilities Regulatory Commission on September 26, 2023 (Resolution No. 1759).



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EU INTEGRATION

On November 10, 2023, JSC "Market operator" brought together representatives of the Ukrainian energy business, industry experts and government officials on one site to discuss new rules of the game for Ukrainian business after the unification of the organised segments of the electricity market in Ukraine and Europe. The parties came to the conclusion that to increase transparency and liquidity in the electricity market of Ukraine and ensure operational security, it is extremely important to connect the Ukrainian organised segments of the electricity market – the day-ahead market, intraday and balancing markets – with the relevant markets of European countries.



DEPUTY MINISTER OF ENERGY OF UKRAINE

SVITLANA GRYNCHUK

Regulation (EU) 2023/56 (CBAM) on carbon border adjustment is an additional incentive for the fastest possible connection of the Ukrainian and European spot markets. The CBAM shall enter into full force on January 1, 2026. However, market coupling is one of the prerequisites for obtaining a deferral from the application of the carbon border adjustment for imported electricity to the European Union. Given our export potential, the issue of obtaining a deferral is a cornerstone not only for Ukraine's energy sector, but also for the economy as a whole.

JSC "Market operator", which has been developing DAM and IDM in Ukraine since 2019, has taken on a bold and responsible mission to effectively implement market coupling. Given the desire of Ukrainian businesses to trade electricity with European businesses, our task is to make the preparatory process for market coupling as productive and fast as possible. Therefore, in order to coordinate regional cross-border issues, we initiated the creation of a Local Implementation Project in Eastern Europe, which will involve stakeholders from the EU member states with which Ukraine shares a common border – the Republic of Poland, Hungary, the Slovak Republic, Romania, and Moldova. We also actively participate in the working and expert groups of the All NEMO Committee as an observer.

In 2023, our specialists worked to create a unified electricity market architecture with European countries and to transpose the provisions of European electricity legislation into national legislation. We cooperated with Ukrainian and European stakeholders to fulfil Ukraine's international obligations under the Energy Community Treaty, implement the decisions of the Energy Community Ministerial Council and introduce market coupling in Ukraine.

THE DRAFT LAW HAS BEEN DEVELOPED

DEADLINE: Q2 2024

LIP CREATION HAS BEEN INITIATED

DEADLINE: Q4 2025 THE LAW OF UKRAINE ON THE MARKET COUPLING EUROPEAN LEGISLATION IMPLEMENTATION

NEMO DEFINITION IN UKRAINE

MCO INTEGRATION PLAN SIGNING BY NEMO SUBJECT TO THE LEGISLATION IMPLEMENTATION

UKRAINIAN REGULATORY LEGISLATION AMENDMENTS FOR MARKET COUPLING IMPLEMENTATION

OUR TECHNICAL AND ORGANISATIONAL PREPARATION

The European integration path of the Ukrainian electricity sector is not limited to the introduction of market coupling. Pursuant to the provisions of the Law of Ukraine "On Amendments to Certain Laws of Ukraine Regarding the Restoration and Green Transformation of the Energy System of Ukraine" No. 3220-IX dated 30/06/2023, JSC "Market operator" worked on the preparation of a trading platform for the sale of guarantees of origin for energy from renewable sources.

In addition, JSC "Market operator" has been designated as a party that professionally organises operations with wholesale energy products in the electricity market. We are getting ready to carry out the registered reporting mechanism functions and inside information platform administrator. The performance of such functions is assigned to JSC "Market operator" in the provisions of the Law of Ukraine "On Amendments to Certain Laws of Ukraine on Prevention of Abuse in Wholesale Energy Markets" No. 3141-IX dated 10/06/2023 and the Law of Ukraine "On Amendments to Certain Laws of Ukraine on Prevention of Abuse in Wholesale Energy Markets", which transposed the provisions of the European Regulation on Wholesale Energy Market Integrity and Transparency (REMIT) into Ukrainian legislation.

Our experts are getting ready to launch software that will be used to provide data transmission services for transactions with wholesale energy products in accordance with the European requirements. The transfer of such data to the NEURC will help to prevent abuse by participants in the wholesale energy markets, ensure transparency and integrity in these markets.

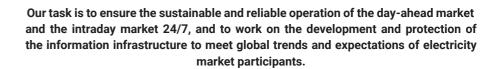
JSC "Market operator" has already launched an automated analytical platform used by market participants to model and analyse prices on the spot electricity markets of neighbouring countries for their export-import operations for the purchase and sale of electricity. The information available on the analytical platform can be used by market participants to make decisions, plan further activities, and understand investment favourability for potential participation in various segments of the electricity market.

Taking into account the European experience, the best mechanism to increase competition and ensure transparency in the bilateral agreements segment is the introduction of electricity exchange trading.

We plan to organize and conduct e-auctions in the bilateral agreement market using both financial and non-financial tools under the Law of Ukraine "On Capital Markets and Organised Commodity Markets". The introduction of full-fledged clearing on the commodity exchange will guarantee the fulfilment of all agreements concluded between participants in different market segments under the current legislation.



IT INFRASTRUCTURE DEVELOPMENT AND CYBERSECURITY



As part of the Memorandum of Cooperation signed with the G.E. Pukhov Institute for Modelling in Energy Engineering in 2023, we developed a mathematical model for calculating medium- and long-term demand and price forecasts in the day-ahead market, which will allow us to analyse key indicators of the day-ahead market and, as a result, identify potential atypical behaviour of market participants.

We have also strengthened our defences against cyber attacks by introducing Endpoint Detection and Response (EDR) software, which enables us to automatically take measures to stop malicious activity and the spread of malware if we detect signs of malware on computers and servers. We plan to implement a centralised privileged access control system and a software package to prevent information leakage.

Our IT team has been working to improve existing software and develop new software. A part of our European integration task is to launch a guarantees of origin trading platform, an inside information platform, and a registered reporting mechanism platform, an electricity market monitoring system and a counterparty risk analysis system. Therefore, we are working on IT solutions that will facilitate effective monitoring of the country's energy market in accordance with REMIT requirements.



INVESTMENT
IN EDUCATION

«MARKET OPERATOR» TOGETHER WITH MR TARAS SHEVCHENKO NATIONAL UNIVERSITY OF KYIV WILL TRAIN SPECIALISTS FOR UKRAINIAN BUSINESS

As a European-style company, we see our social mission as teaching future young professionals practical knowledge in the electricity sector, explaining how the economy of the company is structured and what business processes contribute to successful work in times of war. Therefore, on November 17, 2023, JSC "Market operator" signed an agreement on educational partnership with Mr Taras Shevchenko National University of Kyiv. The agreement on scientific and educational cooperation was signed by Mr Oleksandr Havva, Director General of JSC "Market operator", and Mr Volodymyr Buhrov, Rector of Taras Shevchenko National University of Kyiv.



DIRECTOR GENERAL OF JSC «MARKET OPERATOR»

MR OLEKSANDR HAVVA

The energy sector plays a key role in Ukraine's economy. Given the Energy Strategy of Ukraine until 2050 developed by the Ministry of Energy, the industry expects to increase both production capacity and cash flows. Accordingly, the number of job position will increase, taking into account gender equality and social inclusion. Therefore, employers' investments in education are crucial today.

RECTOR OF TARAS SHEVCHENKO NATIONAL UNIVERSITY OF KYIV

MR VOLODYMYR BUHROV

Consolidating the efforts of employers and academics in training students is crucial. The university having its considerable scientific potential, particularly of the Faculty of Economics, is ready to develop new courses and explore the electricity market of Ukraine together with the new partner.



OUR PROJECTS

Experience shows that only 0.2% of small businesses in Ukraine buy electricity using complex market algorithms: on the bilateral contracts market, the day-ahead market, the intraday market and the balancing market. State-owned companies declare their intention to purchase electricity through Prozorro. Private sector companies that consume up to 50,000 kWh per month contract electricity from universal service providers (USPs), while those that consume between 50,000 kWh and 100,000 kWh contract electricity from suppliers in the region of their business.

However, the licence to be an electricity supplier applies to the whole country, and the consumer can buy from the lowest-priced supplier, regardless of whether the production is located in Lviv or Kharkiv.

«MARKET OPERATOR» OPENS A PLATFORM FOR ELECTRICITY RETAIL TRADE

In 2023, following business requests, JSC "Market operator" developed a platform for retail electricity trade – RETAIL ENERGY PLATFORM, where the supplier can offer its terms and conditions and the price of electricity supply, and the consumer can find a favourable offer. REP is a new IT solution to make it easier for consumers to find their supplier. The platform allows to find the required KWh from suppliers, that are licensed electricity market participants, quickly and free of charge.





WARE MANAGEMENT

▲ АВТОРИЗАЦІЯ

БАЖАЄТЕ ОБРАТИ ЕЛЕКТРОПОСТАЧАЛЬНИКА?





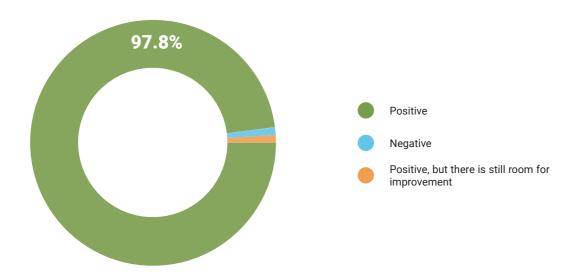
FEEDBACK ABOUT OUR OPERATION

97.8%

of the surveyed companies operating on the site of «Market operator», evaluate positively DAM and IDM operation in 2023

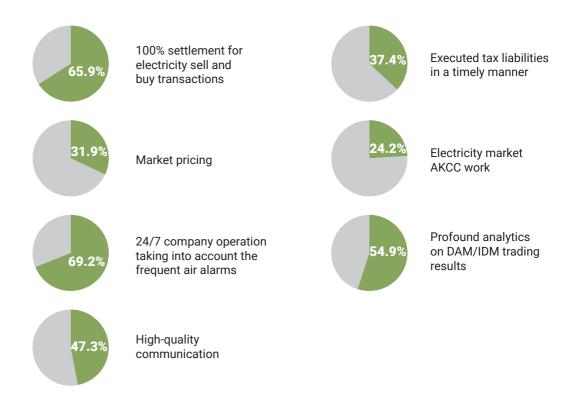
97.8% of the surveyed companies that sell and buy electricity on the day-ahead and intraday markets positively assessed the operation of the spot electricity market in 2023. This is evidenced by the results of a survey conducted by JSC «Market operator» between January 18 and February 1, 2024 by means of a targeted electronic survey of companies operating on the site of «Market operator».

1. What is your overall assessment of DAM and IDM operation by JSC "Market operator" in 2023?



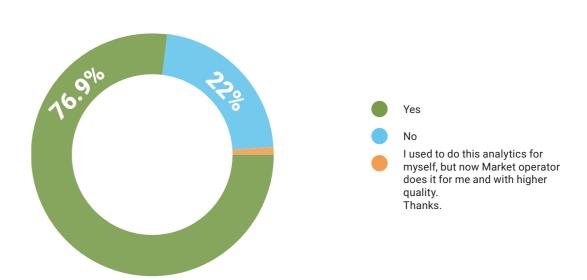
The most important quality on the "Market operator" performance for 69.2% of energy companies in 2023 was its uinterrupted operation 24/7, especially taking into account the frequent air alarms. For 65.9% of companies the most important thing in 2023 was 100% settlement for electricity sold on DAM and IDM, including on weekends, and for 54.9% of energy companies was the detailed analytics. 47.3% of companies indicated that high-quality communication was important to them, while 47.3% of market participants positively assessed the timely fulfilment of tax obligations by JSC "Market operator", 31.9% – market pricing on the DAM and IDM, 24.2% – the work of the electricity market AKCC.

2. The most important thing for you about Market operator work in 2023:

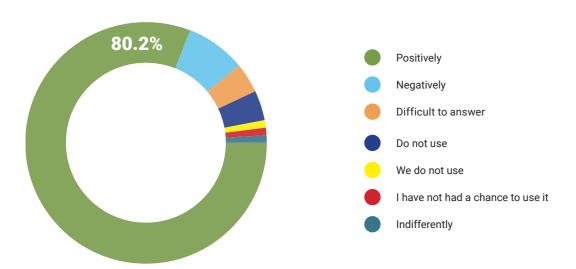


94.5% of energy companies have no remarks on the running of DAM/IDM trading in 2023. 80.2 % of market participants positively assessed the REP which is an online platform for retail electricity market participants developed by JSC «Market operator». 76.9% of the surveyed companies indicated that analytical reports, which are publicly available on the website of «Market operator», are in demand in their work.

3. Do you use detailed analytical reports prepared by Market operator in your work? What is the practical benefit of such analytics for you?

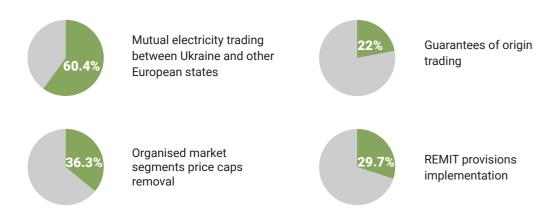


4. How do you assess the REP operation that is an online platform for retail electricity market participants developed by JSC "Market operator"?



In answer to the question "What does the Ukrainian electricity market lack?", 60.4% of market participants said that it lacks joint electricity trade with European countries. 36.3% said that DAM/IDM price caps should be cancelled, while 29.7% voted in favour of REMIT reporting. 22% of market participants said that guarantees of origin trading should be introduced.

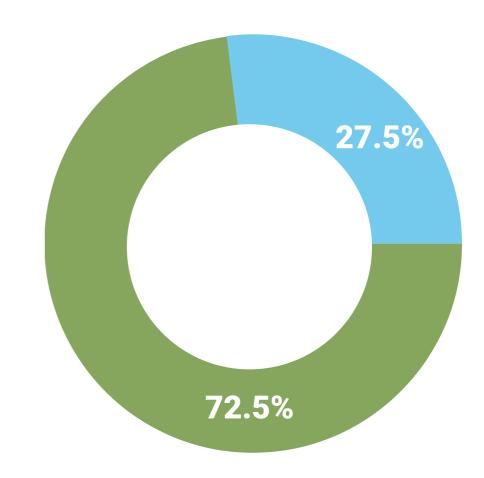
5. In your opinion, what does the Ukrainian electricity market lack?



IN 2023, 72.5% OF MARKET PARTICIPANTS RATED THE WORK OF JSC «MARKET OPERATOR» AT 5 POINTS, 27.5% GAVE 4 POINTS. THANK YOU FOR YOUR TRUST AND SUGGESTIONS ON HOW TO MAKE THE COMPANY'S WORK EVEN BETTER.

6. Please rate the performance of JSC Market operator in 2023 on a 5-point scale.





THE SURVEY WAS CONDUCTED BY "MARKET OPERATOR" BY MEANS OF AN ELECTRONIC SURVEY AMONG THE DAY-AHEAD AND INTRADAY MARKET PARTICIPANTS IN ORDER TO IMPROVE THE COMPANY'S WORK.

INFORMATION AND CONSULTING

SERVICES

JSC "Market operator" has expanded the horizon of electricity prices modelling for Slovakian, Romanian, Hungarian, and Polish spot markets. The availability of such data at D-4 will allow traders to adjust their trading strategy for export and import operations in the electricity market.

The analytical platform of JSC "Market operator" is available for electricity producers and sellers with extended information on the day-ahead and intraday markets of Ukraine, including prices and volumes of accepted electricity for the month, day, by hour, except for confidential information.

Also, the detailed analyzing tool of bilateral agreements market UEE auctions was developed. This analytics helps to minimize the price risks and to plan trading activities efficiently.

Analysis service of bilateral agreements market UEE auctions includes the access to the following information on:

- Auction bulletin according to the planned trades calendar
- Same product offers comparison from different initiators for the planned auctions
- Guarantee and bidding fee calculation
- Conducted auctions results with the depiction of starting and final prices, declared and factual volumes for every supply hour
- Comparison of DAM and weighted average hourly prices for bilateral agreements auction results
- · Bilateral agreements monthly aggregated volumes and prices.

For more information, please call to (044) 205-01-91, (044) 205-01-84 or mail to daree@oree.com.ua

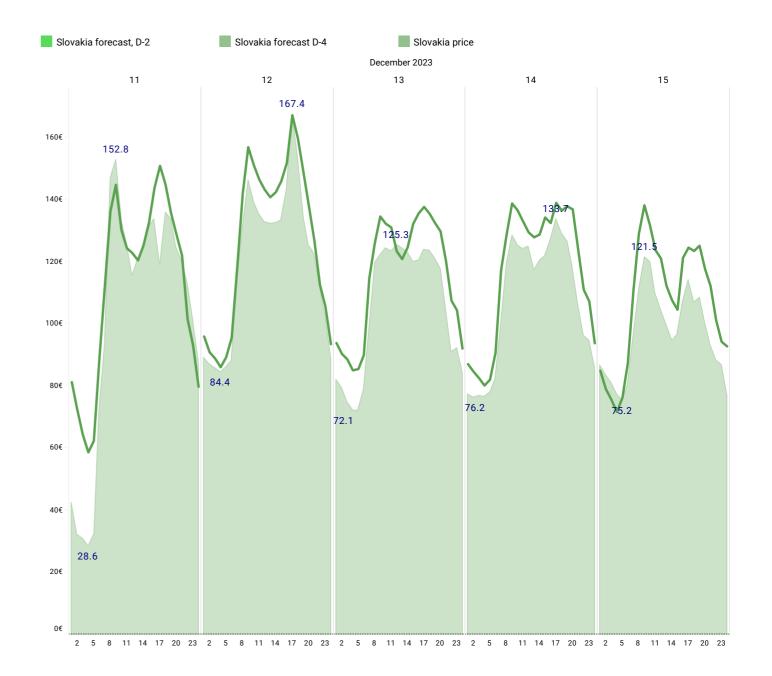


DAM HOURLY RESULTS MODELLING, EUR/MWH

Slovakian prices

RO - Romania | SK - Slovakia | PL - Poland | HU - Hungary

	11.12.2023		12.12.2023		13.12.2023		14.12.2023		15.12.2023	
Hour	SK D-4	SK price								
1	81.2	42.5	95.9	89.1	93.8	82.0	87.0	77.3	84.9	86.8
2	72.3	32.1	90.8	87.1	90.3	79.5	84.6	76.2	79.0	83.5
3	64.3	31.0	88.8	85.6	88.5	74.7	82.5	76.8	75.6	80.9
4	58.6	28.6	86.0	84.4	85.0	72.1	80.1	76.6	71.6	77.4
5	62.3	32.4	89.2	86.3	85.4	72.1	82.0	78.2	76.1	75.2
6	88.6	71.5	95.5	88.0	89.9	78.9	90.7	82.3	87.4	80.4
7	112.2	93.4	118.0	113.6	114.7	99.4	117.1	100.0	110.5	96.0
8	136.1	146.7	141.8	131.5	125.9	119.6	128.6	119.3	129.0	111.0
9	144.7	152.8	156.8	146.5	134.5	121.9	138.7	128.6	138.1	121.5
10	130.2	132.9	151.1	139.1	132.2	124.4	136.5	125.1	131.7	119.9
11	124.3	125.9	146.4	135.2	131.0	123.2	132.9	124.2	123.7	109.9
12	122.7	115.5	143.1	132.8	123.3	125.3	129.4	125.0	121.0	104.6
13	120.4	121.1	140.7	132.2	120.8	124.5	127.8	117.4	112.2	99.6
14	125.2	124.1	142.3	132.4	124.6	123.0	128.7	120.5	107.6	94.6
15	132.5	130.9	145.9	133.2	132.1	119.9	134.2	121.9	104.5	96.5
16	143.7	133.9	151.7	143.1	135.5	120.3	132.4	127.1	121.2	107.2
17	150.8	118.9	167.1	167.4	137.6	123.8	138.9	133.7	124.5	114.3
18	144.8	136.0	159.7	153.6	135.4	123.6	136.4	129.1	123.4	106.9
19	135.6	133.6	148.9	134.3	132.4	121.0	137.8	126.4	125.1	108.4
20	128.6	124.6	137.9	125.3	129.7	117.6	136.8	118.6	117.6	100.8
21	121.9	120.1	126.7	122.6	120.1	105.4	123.7	106.5	112.1	93.4
22	101.5	113.1	112.6	111.9	107.4	90.9	110.9	96.2	101.2	88.4
23	93.0	100.8	105.5	102.1	104.3	92.4	107.2	94.5	94.2	86.8
24	79.7	87.0	93.4	88.5	92.0	84.3	93.7	85.6	92.7	76.7
Base	111.5	102.0	126.5	119.4	115.3	105.0	116.6	106.9	106.9	96.7



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FORECASTED DAM PRICES FOR 4 COUNTRIES, EUR/MWH

Forecasted prices

Date	Day of a week	RO D-4	RO price	SK D-4	SK price	PLD-4	PL price
01.12.23	Friday	107	90	124	160	96	145
02.12.23	Saturday	86	101	93	111	100	113
03.12.23	Sunday	94	86	98	100	100	101
04.12.23	Monday	125	124	120	124	123	123
05.12.23	Tuesday	126	131	128	133	128	124
06.12.23	Wednesday	124	130	132	130	135	125
07.12.23	Thursday	128	121	136	121	137	126
08.12.23	Friday	105	108	120	109	119	116
09.12.23	Saturday	93	95	97	95	100	111
10.12.23	Sunday	91	77	94	72	96	83
11.12.23	Monday	115	108	111	102	121	105
12.12.23	Tuesday	128	127	126	119	125	127
13.12.23	Wednesday	121	111	115	105	124	118
14.12.23	Thursday	118	106	117	107	113	109
15.12.23	Friday	109	96	107	97	118	100
16.12.23	Saturday	95	81	87	72	86	72
17.12.23	Sunday	88	67	84	60	70	48
18.12.23	Monday	104	94	99	83	89	75
19.12.23	Tuesday	113	101	92	74	87	75
20.12.23	Wednesday	114	96	83	71	88	76
21.12.23	Thursday	122	102	94	74	88	70
22.12.23	Friday	102	75	53	30	68	40
23.12.23	Saturday	59	28	50	31	50	32
24.12.23	Sunday	63	38	42	20	44	35
25.12.23	Monday	13	4	15	1	18	1
26.12.23	Tuesday	36	25	33	20	29	11
27.12.23	Wednesday	73	56	77	60	83	67
28.12.23	Thursday	66	42	61	33	75	47
29.12.23	Friday	42	23	39	16	39	19
30.12.23	Saturday	37	36	37	35	40	35
31.12.23	Sunday	17	29	17	24	33	54
For t	he period	91	81				









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