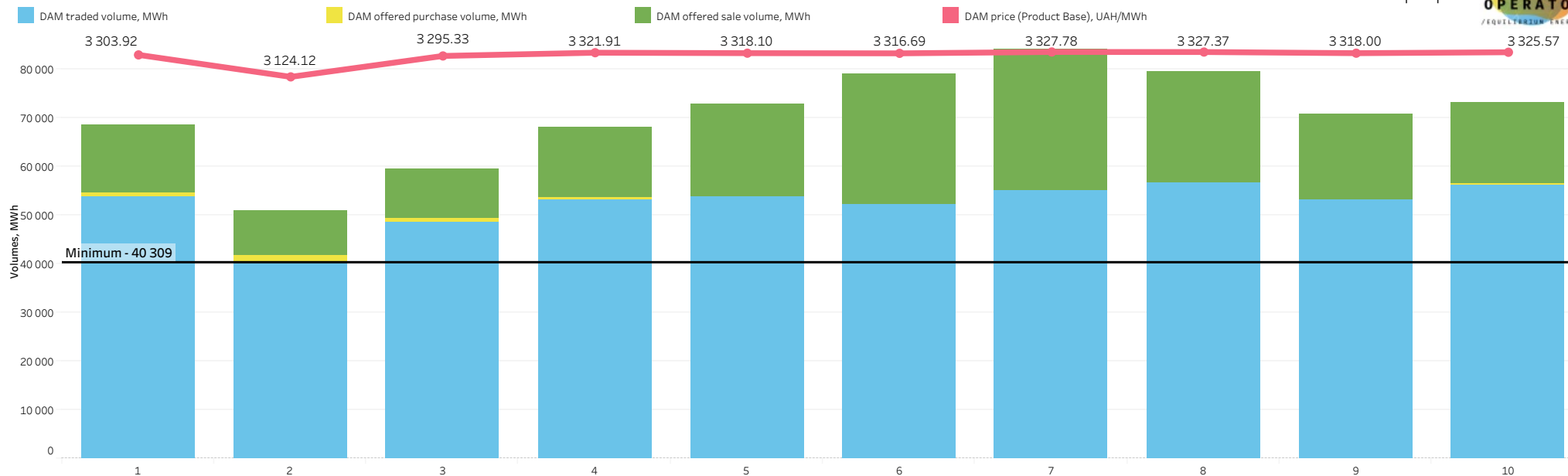


Comparative analysis of the market for 10 days of November 2022:

1. Analysis of the day-ahead market (DAM) operation;
2. Analysis of the intraday market (IDM) operation;
3. Comparative analysis of DAM prices in Ukraine, Romania, Slovak Republic and Hungary;
4. Comparative analysis of DAM and bilateral contracts market (BCM) prices.

Prices, traded and offered volumes on the DAM for the period: November 1-10, 2022



522 369 MWh were traded on the DAM in the first decade of November.

The largest traded volume of DAM was fixed in amount of 56 680 MWh on November 8 (Tuesday),

and the smallest one - in amount of 40 309 MWh on November 2 (Wednesday).

The traded **sold** volume on the DAM was 26,0% less than offered one for the first 10 days of November 2022.

The traded **purchased** volume on the DAM was 0,7% less than offered one for the same period.

Date	DAM price (Product Base), UAH/MWh	DAM traded volume, MWh	DAM offered purchase volume, MWh	DAM offered sale volume, MWh	The difference between the DAM traded and offered purchase volume	The difference between the DAM traded and offered sale volume
November 1, 2022	3 303.92	53 703	54 540	68 468	-1.5%	-21.6%
November 2, 2022	3 124.12	40 309	41 654	50 933	-3.2%	-20.9%
November 3, 2022	3 295.33	48 602	49 350	59 544	-1.5%	-18.4%
November 4, 2022	3 321.91	53 058	53 595	68 026	-1.0%	-22.0%
November 5, 2022	3 318.10	53 689	53 693	72 772	0.0%	-26.2%
November 6, 2022	3 316.69	52 160	52 164	78 877	0.0%	-33.9%
November 7, 2022	3 327.78	55 030	55 034	84 057	0.0%	-34.5%
November 8, 2022	3 327.37	56 680	56 685	79 472	0.0%	-28.7%
November 9, 2022	3 318.00	53 054	53 107	70 765	-0.1%	-25.0%
November 10, 2022	3 325.57	56 086	56 442	72 972	-0.6%	-23.1%
Total	3 297.88	522 369	526 264	705 886	-0.7%	-26.0%

*all prices are net of VAT **Ukraine's IPS data

Prices, traded and offered volumes on the IDM for the period: November 1-10, 2022

Date	IDM weighted average price, UAH/MWh	IDM traded volume, MWh	IDM offered purchase volume, MWh	IDM offered sale volume, MWh	The difference between the IDM traded and offered purchase volume	The difference between the IDM traded and offered sale volume
November 1, 2022	3 625.57	5 399	5 493	21 537	-1.7%	-74.9%
November 2, 2022	3 708.44	4 753	4 968	18 863	-4.3%	-74.8%
November 3, 2022	3 651.29	3 446	3 568	14 128	-3.4%	-75.6%
November 4, 2022	3 727.85	2 708	2 860	11 563	-5.3%	-76.6%
November 5, 2022	3 612.24	4 596	4 914	10 873	-6.5%	-57.7%
November 6, 2022	3 565.54	2 386	2 395	7 506	-0.4%	-68.2%
November 7, 2022	3 798.53	2 950	2 984	10 582	-1.1%	-72.1%
November 8, 2022	3 795.25	5 274	5 641	10 526	-6.5%	-49.9%
November 9, 2022	3 749.49	3 368	3 393	14 333	-0.7%	-76.5%
November 10, 2022	3 459.09	3 883	3 891	10 357	-0.2%	-62.5%
Total	3 670.23	38 762	40 107	130 268	-3.4%	-70.2%

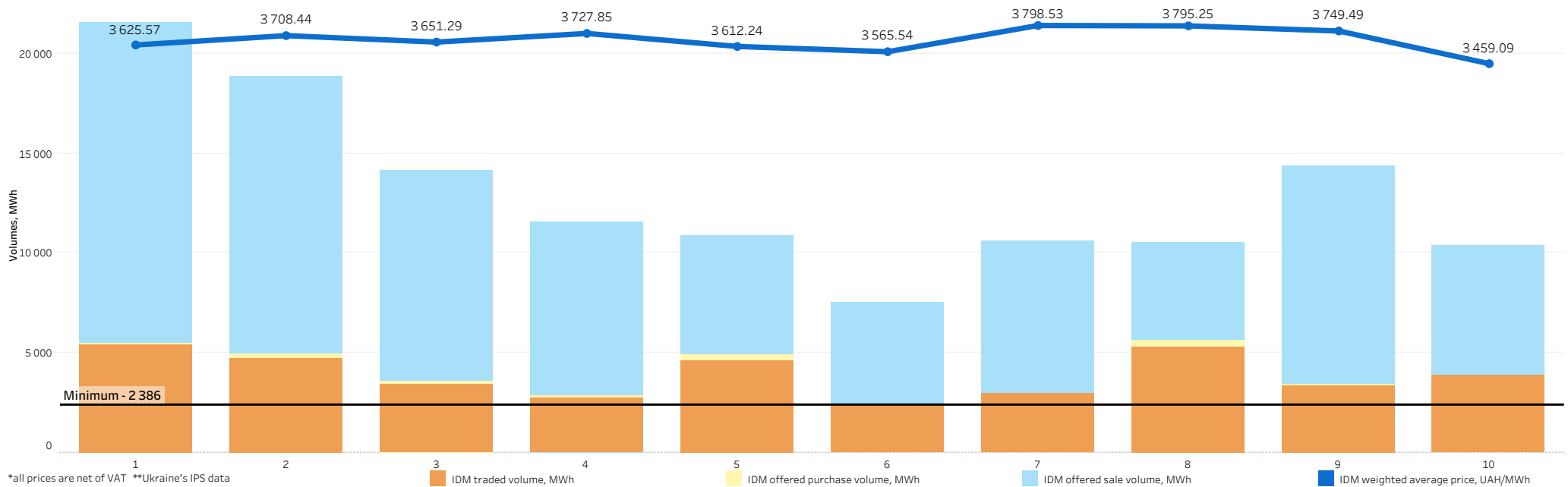
38 762 MWh were traded on the IDM in the first decade of November.

The largest traded volume of IDM was fixed in amount of 5 399 MWh on November 1 (Tuesday),

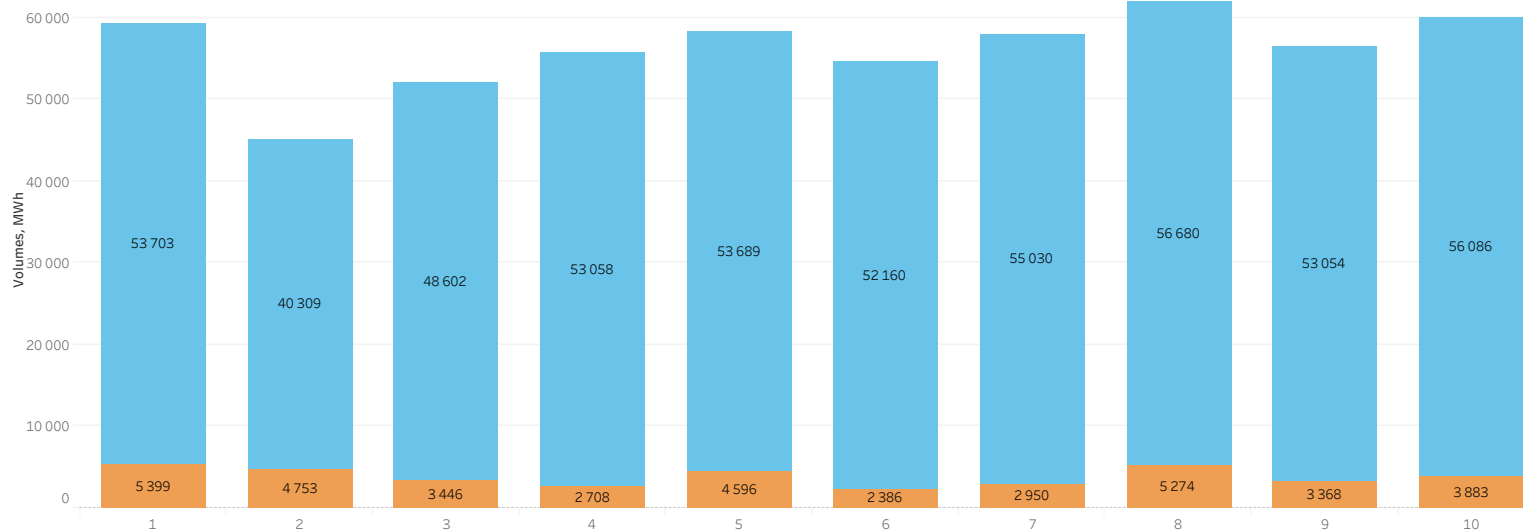
and the smallest one - in amount of 2 386 MWh on November 6 (Sunday).

The traded **sold** volume on the IDM was 70,2% less than offered one for the first 10 days of November 2022.

The traded **purchased** volume on the IDM was 3,4% less than offered one for the same period.



Distribution of traded volumes on the DAM and on the IDM



The total traded amount of electricity within the two market segments amounted to **561 132 MWh** in the first decade of November 2022.

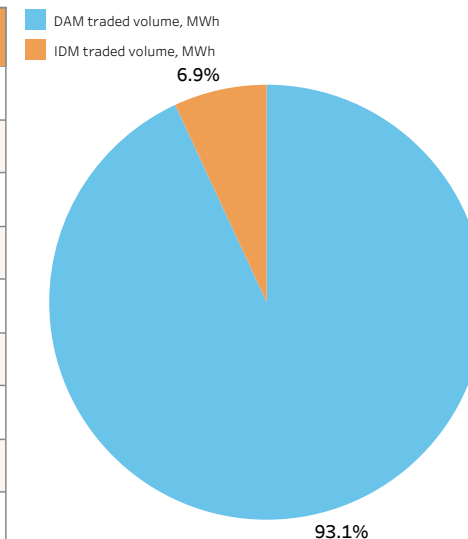
The share of the **DAM** was **93,1 %** or **522 369 MWh** in the total volume,

while the share of the **IDM** was almost **6,9%** or **38 762 MWh**.

The largest traded volume within the two market segments was fixed in amount of **61 954 MWh** on **November 8 (Tuesday)**, as well as the smallest one - in amount of **45 062 MWh** on **November 2 (Wednesday)**.

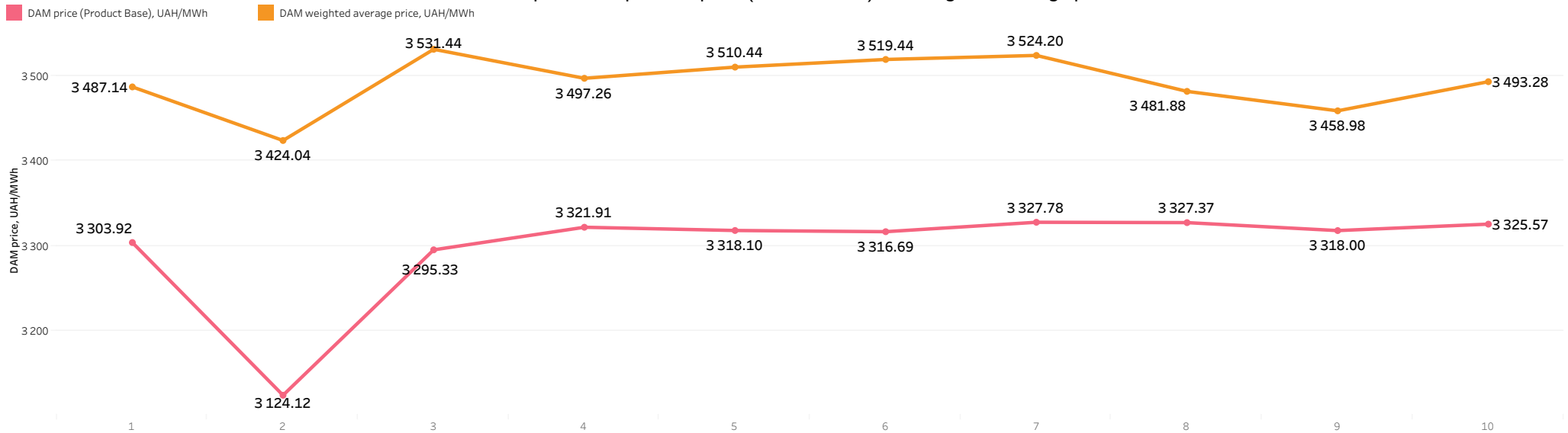
Volumes on the DAM and on the IDM

Date	Total volume, MWh	DAM traded volume, MWh	The share of the DAM volume in the total volume	IDM traded volume, MWh	The share of the IDM volume in the total volume
November 1, 2022	59 102	53 703	90.9%	5 399	9.1%
November 2, 2022	45 062	40 309	89.5%	4 753	10.5%
November 3, 2022	52 049	48 602	93.4%	3 446	6.6%
November 4, 2022	55 766	53 058	95.1%	2 708	4.9%
November 5, 2022	58 285	53 689	92.1%	4 596	7.9%
November 6, 2022	54 545	52 160	95.6%	2 386	4.4%
November 7, 2022	57 980	55 030	94.9%	2 950	5.1%
November 8, 2022	61 954	56 680	91.5%	5 274	8.5%
November 9, 2022	56 421	53 054	94.0%	3 368	6.0%
November 10, 2022	59 969	56 086	93.5%	3 883	6.5%
Total	561 132	522 369	93.1%	38 762	6.9%



The DAM prices for the period: November 1-10, 2022

The DAM prices comparison: price (Product Base) and weighted average price



The DAM prices

Date	DAM price (Product Base), UAH/MWh	Comparison of the DAM price with the previous day	DAM weighted average price, UAH/MWh	The difference between the DAM weighted average price and the DAM price (Product Base), UAH/MWh	DAM price (Product Peak), UAH/MWh	DAM price (Product OffPeak), UAH/MWh
November 1, 2022	3303.92	-0.8%	3487.14	+183.22	3981.67	2626.18
November 2, 2022	3124.12	-5.4%	3424.04	+299.92	3903.33	2344.91
November 3, 2022	3295.33	5.5%	3531.44	+236.11	3996.48	2594.17
November 4, 2022	3321.91	0.8%	3497.26	+175.35	3987.08	2656.74
November 5, 2022	3318.10	-0.1%	3510.44	+192.34	3986.55	2649.65
November 6, 2022	3316.69	0.0%	3519.44	+202.75	3983.15	2650.24
November 7, 2022	3327.78	0.3%	3524.20	+196.42	3994.66	2660.89
November 8, 2022	3327.37	0.0%	3481.88	+154.51	3993.22	2661.52
November 9, 2022	3318.00	-0.3%	3458.98	+140.98	3974.19	2661.80
November 10, 2022	3325.57	0.2%	3493.28	+167.71	3991.40	2659.75
Average indicator	3297.88		3494.18	+196.30	3979.17	2616.58

For the period of November 1-10, 2022:

DAM price (Product Base) was **3 297,88 UAH/MWh**,
 DAM weighted average price was **3 494,18 UAH/MWh**,
 DAM price (Product Peak) was **3 979,17 UAH/MWh**,
 DAM price (Product OffPeak) was **2 616,58 UAH/MWh**,

The highest price of the DAM (Product Base) was fixed in amount of **3 327,78 UAH/MWh** on **November 7 (Monday)**, and the lowest one - in amount of **3 124,12 UAH/MWh** on **November 2 (Wednesday)**.

The highest weighted average price on the DAM was fixed in amount of **3 531,44 UAH/MWh** on **November 3 (Thursday)**, and the lowest one - in amount of **3 424,04 UAH/MWh** on **November 2 (Wednesday)**.

The difference between the weighted average price on the DAM and the DAM (Product Base) was **196,30 UAH/MWh** in the first decade of November 2022.

*all prices are net of VAT **Ukraine's IPS data

The DAM and IDM prices comparison for the period: November 1-10, 2022



The largest difference in the hour between weighted average price on the IDM and on the DAM price (Product Base) was recorded on 9 p.m. November 1 and amounted to 81,24 UAH/MWh.

The difference between hourly prices: the DAM price (Product Base) and weighted average price of the IDM, UAH/MWh

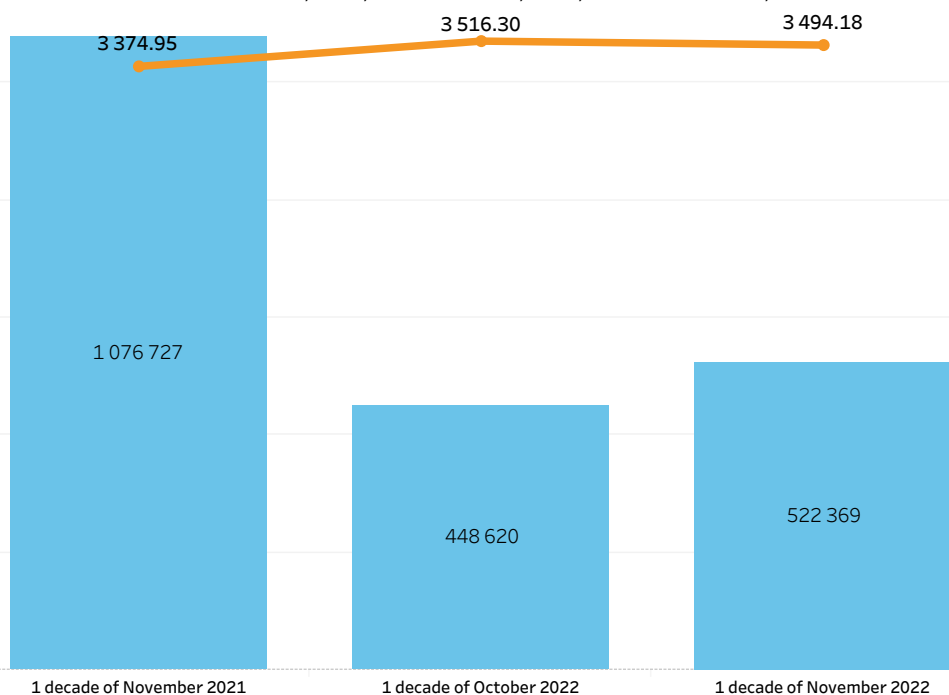
Date	Timeline (hour)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01.11.2022	0.00	-1.89	-30.00	-39.20	-38.60	-30.00	-2.03	-10.00	-30.00	-15.00	-15.00	-15.00	-60.00	-60.00	-15.00	-10.00	0.00	0.00	0.00	0.00	-81.24	-78.44	-78.00	-1.95
02.11.2022	-36.00	-28.00	-28.00	-27.58	-28.00	-28.00	-38.80	-76.00	-75.00	-10.00	-10.00	-10.00	-73.60	-73.70	-75.10	0.00	0.00	0.00	0.00	0.00	0.00	-77.80	-74.60	0.00
03.11.2022	-27.58	-30.00	-38.80	-38.80	-38.80	-30.00	-1.50	-2.44	-5.00	-5.00	-10.00	-10.00	-3.76	-3.44	-5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-5.00	0.00
04.11.2022	-35.00	-4.74	-4.85	-4.74	-4.71	-4.79	-2.13	-1.82	-50.00	-55.00	-10.00	-10.00	-10.00	-10.00	-10.00	0.00	0.00	0.00	0.00	0.00	-2.03	-2.21	-50.00	-2.11
05.11.2022	-5.17	-6.53	-6.75	-6.85	-6.44	-6.40	-6.73	-50.00	-6.48	-50.00	-6.47	-6.42	-56.00	-6.75	-6.58	-4.49	-3.55	-4.58	-4.93	-5.20	-50.00	-5.17	-50.00	-4.20
06.11.2022	-5.61	-5.04	-3.55	-6.01	-5.58	-5.18	-5.00	-5.77	-5.20	-5.20	-8.00	-8.00	-8.00	-5.19	-3.79	-3.63	-5.17	-50.00	-50.00	-50.00	-50.00	-50.00	-50.00	-5.44
07.11.2022	-5.17	-5.19	-5.59	-6.90	-6.00	-6.44	-5.09	-5.16	-5.41	-7.00	-7.00	-7.00	-7.00	-7.00	-5.15	-1.19	-3.56	-4.36	-3.39	-5.97	-5.97	-6.42	-6.88	-4.48
08.11.2022	-3.59	-5.05	-5.19	-6.87	-6.85	-6.58	-2.84	-6.84	-6.46	-7.00	-6.58	-10.00	-10.00	-10.00	-10.00	-2.80	-4.86	-4.08	-3.01	-6.60	-5.18	-4.19	-4.93	-3.70
09.11.2022	-5.19	-1.15	-5.18	-6.53	-6.57	-6.65	-1.16	-6.50	-50.00	-10.00	-10.00	-70.00	-70.00	-70.00	-10.00	0.00	-6.46	0.00	-6.77	-6.49	-6.43	-6.48	-6.55	0.00
10.11.2022	0.00	0.00	-3.67	-3.62	-3.45	-3.90	0.00	-3.66	-9.00	-5.87	-5.00	-5.00	-5.00	-5.00	-3.58	-3.36	-3.47	-3.65	-4.29	-50.00	-5.64	-5.43	-50.00	-3.68

*all prices are net of VAT **Ukraine's IPS data

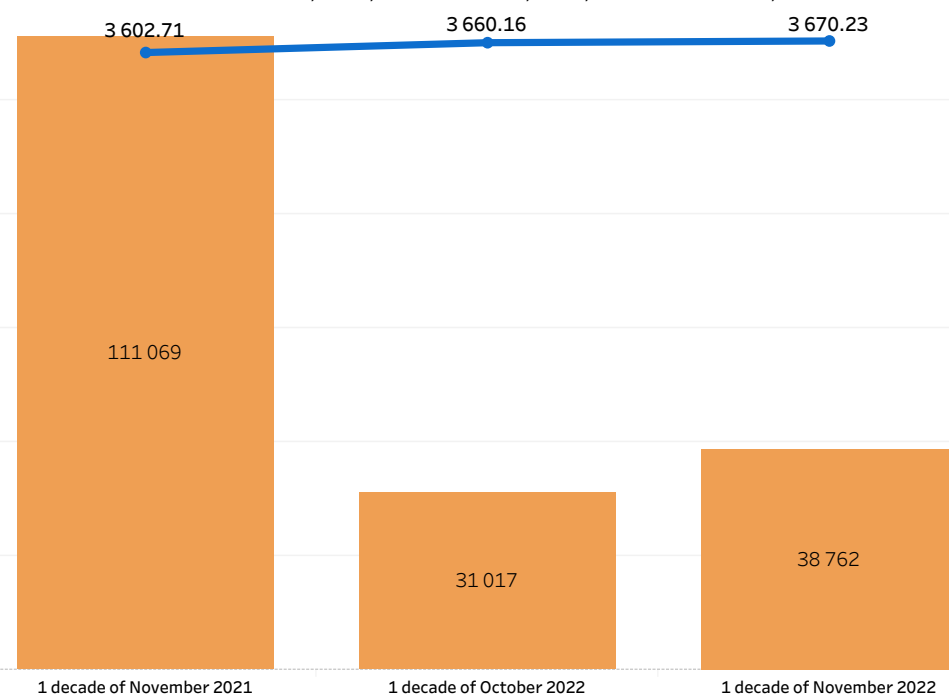
Weighted average prices and traded volumes on the DAM and IDM compared with the previous periods

Indicator	1 decade of November 2021	1 decade of October 2022	1 decade of November 2022
DAM weighted average price, UAH/MWh	3 374.95	3 516.30	3 494.18
DAM traded volume, MWh	1 076 727	448 620	522 369
IDM weighted average price, UAH/MWh	3 602.71	3 660.16	3 670.23
IDM traded volume, MWh	111 069	31 017	38 762

Weighted average prices and traded volumes on the DAM for the periods:
November 2021, 1-10; October 2022, 1-10; November 2022, 1-10



Weighted average prices and traded volumes on the IDM for the periods:
November 2021, 1-10; October 2022, 1-10; November 2022, 1-10



*all prices are net of VAT **Ukraine's IPS data

The DAM prices of Ukraine, Romania, Slovak Republic and Hungary for the period: November 1-10, 2022



The DAM prices (Product Base)*

Date	Ukraine DAM price (Product Base), UAH/MWh	Romania DAM price (Product Base), UAH/MWh	Slovak Republic DAM price (Product Base), UAH/MWh	Hungary DAM price (Product Base), UAH/MWh
November 1, 2022	3 295.59	5 679.46	4 677.74	4 739.01
November 2, 2022	3 106.58	7 719.52	5 218.82	7 412.75
November 3, 2022	3 319.74	6 724.21	5 201.34	6 005.04
November 4, 2022	3 323.15	6 620.56	6 515.78	6 575.95
November 5, 2022	3 318.08	4 960.21	4 879.65	4 962.97
November 6, 2022	3 316.71	4 405.66	4 180.15	4 329.46
November 7, 2022	3 327.84	7 777.65	6 483.58	8 144.78
November 8, 2022	3 327.30	6 781.85	5 850.65	5 902.03
November 9, 2022	3 318.21	7 458.67	7 358.42	7 451.36
November 10, 2022	3 325.52	8 936.65	8 962.99	8 853.08
Average indicator	3 297.87	6 706.45	5 932.91	6 437.64

The DAM prices comparison to the previous day*

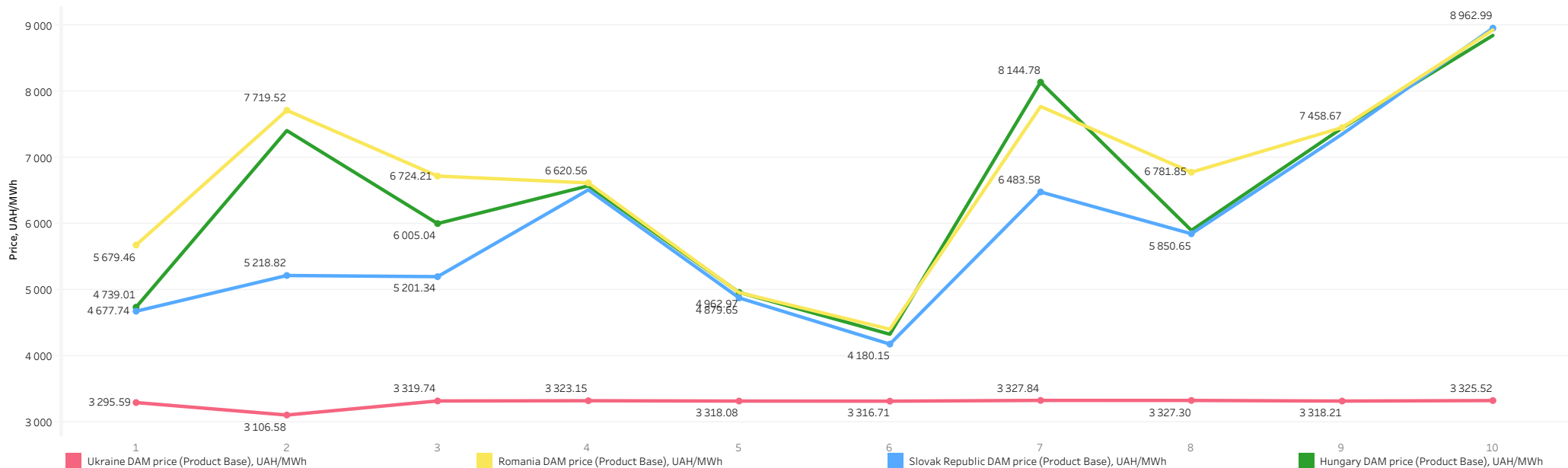
Date	DAM price comparison to the previous day, Ukraine	DAM price comparison to the previous day, Romania	DAM price comparison to the previous day, Slovak Republic	DAM price comparison to the previous day, Hungary
November 1, 2022	-1.1%	-6.8%	-11.9%	-11.5%
November 2, 2022	-5.7%	35.9%	11.6%	56.4%
November 3, 2022	6.9%	-12.9%	-0.3%	-19.0%
November 4, 2022	0.1%	-1.5%	25.3%	9.5%
November 5, 2022	-0.2%	-25.1%	-25.1%	-24.5%
November 6, 2022	0.0%	-11.2%	-14.3%	-12.8%
November 7, 2022	0.3%	76.5%	55.1%	88.1%
November 8, 2022	0.0%	-12.8%	-9.8%	-27.5%
November 9, 2022	-0.3%	10.0%	25.8%	26.3%
November 10, 2022	0.2%	19.8%	21.8%	18.8%

For the period of November 1-10, 2022:

- the DAM of **Ukraine**: the highest price was fixed in amount of **3 327,84 UAH/MWh** on **November 7**, the lowest one - in amount of **3 106,58 UAH/MWh** on **November 2**;
- the DAM of **Romania**: the highest price was fixed in amount of **8 936,65 UAH/MWh** on **November 10**, the lowest one - in amount of **4 405,66 UAH/MWh** on **November 6**;
- the DAM of **Slovak Republic**: the highest price was fixed in amount of **8 962,99 UAH/MWh** on **November 10**, the lowest one - in amount of **4 180,15 UAH/MWh** on **November 6**;
- the DAM of **Hungary**: the highest price was fixed in amount of **8 853,08 UAH/MWh** on **November 10**, the lowest one - in amount of **4 329,46 UAH/MWh** on **November 6**.

* the calculation was made according to the unified Central European Time (CET) **Ukraine's IPS data ***all prices are net of VAT

The DAM prices (Product Base) of Ukraine, Romania, Slovak Republic and Hungary*



The DAM and the BCM prices for the period: November 1-10, 2022

The DAM and the BCM prices

Date	DAM price (Product Base), UAH/MWh	BCM price (Product Base), UAH/MWh	Price difference, UAH/MWh
November 1, 2022	3 303.92	3 431.27	+127.35
November 2, 2022	3 124.12	3 421.95	+297.83
November 3, 2022	3 295.33	3 421.93	+126.60
November 4, 2022	3 321.91	3 421.93	+100.02
November 5, 2022	3 318.10	3 421.93	+103.83
November 6, 2022	3 316.69	3 421.93	+105.24
November 7, 2022	3 327.78	3 421.93	+94.15
November 8, 2022	3 327.37	3 421.93	+94.56
November 9, 2022	3 318.00	3 421.93	+103.93
November 10, 2022	3 325.57	3 421.93	+96.36
Average indicator	3 297.88	3 422.86	+124.99

For the period of November 1-10, 2022 on average, the BCM price was **124,99 UAH/MWh** higher than the DAM price.

The highest price difference was fixed in amount of **297,83 UAH/MWh** on November 2, the lowest one - in amount of **94,15 UAH/MWh** on November 7.

*The BCM price was calculated according to the results of UEB auctions for the sale of electricity under bilateral contracts held in the previous month (October) and the month of supply (November), for the purchase and sale of base load electricity for the month of supply (November 2022, respectively)

all prices are net of VAT *Ukraine's IPS data

