Transelectrica®
Societate Administrată în Sistem Dualist

MARKET MONITORING REPORT

Balancing Market

June 2023

Abbrevations

ANRE - Romanian Energy Regulatory Authority
HHI - Herfindahl-Hirschman Index
BRP - Balance Responsible Party
BM - Balancing Market
DAM - Day Ahead Market
TSO - Transmission System Operator
DU – Dispatchable Unit
PN – Physical Notification
NDC - National Dispatching Center
C1 – The market share of the largest market participant
C3 – Total market share of top 3 market participants
NPS – Minimum number of residual generators
TTC – Total Transfer Capacity
NTC – Net Transfer Capacity
ATC – Available Transfer Capacity
NRA – National Regulatory Authority

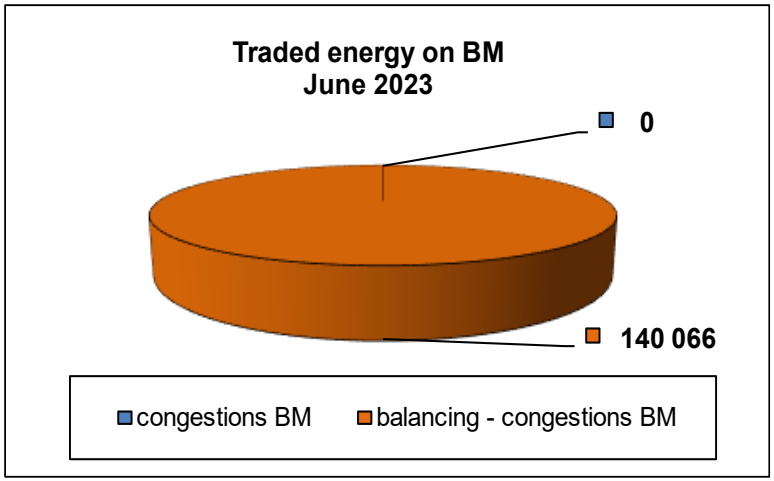
According to the Commercial Code. Transelectrica. the Romanian Transmission System Operator. operates and monitors the activity of 3 types of markets: Balancing Market. Ancillary Services Market and Market for Allocation of Cross-Border Capacities.

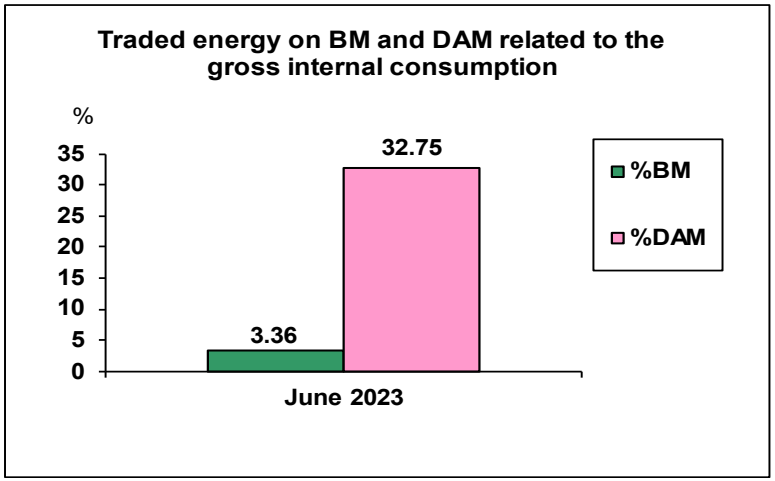
Using the records from the markets data bases. Transelectrica prepares daily. weekly and monthly monitoring reports. A part of the data included in these reports (those data which are not confidential) are published on the website www.transelectrica.ro (section Transparency).

Balancing Market

The Balance Generation/Consumption

- The average monthly value of generated power was 5 938 MW and the actual internal gross consumption was 5 788 MW.
- The NDC consumption forecast was close to the actual consumption, the standard deviation being **2.02%**. Bigger differences were registered in case of consumption values resulted as the sum between notified production and total scheduled exchanges with the neighbouring power systems. In this case the standard monthly deviation value was **6.2%**. The greatest daily deviation regarding the notifications was registered on 4th of June (**16.23%**).
- The energy used in June 2023 for balancing the power system and congestion management was 140 066 MWh (with an average power of 195 MW, which means **3.63**% from the internal gross consumption).
- There was no energy used for congestion management, nor for transactions outside BM (with financial compensation).
- The energy used in June 2023 on Day Ahead Market was de 1 364 826 MWh (with an average power of 1 896 MW, which means 32.75% from the internal gross consumption). Data are shown in EET hours.
- The total cost of the energy traded on the Balancing Market was 49 371 326 lei (with an average weighted price of 352.49 lei/MWh).





Balancing Market

The Balance Generation / Consumption

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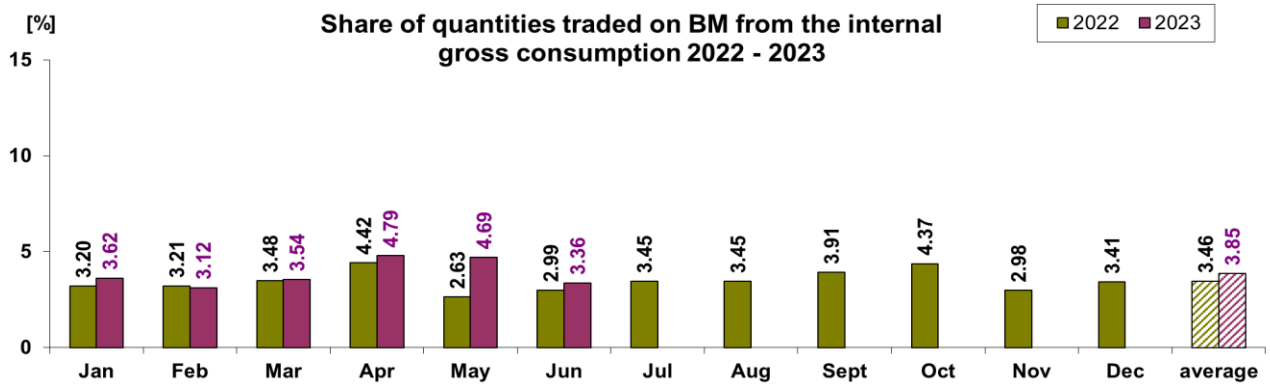
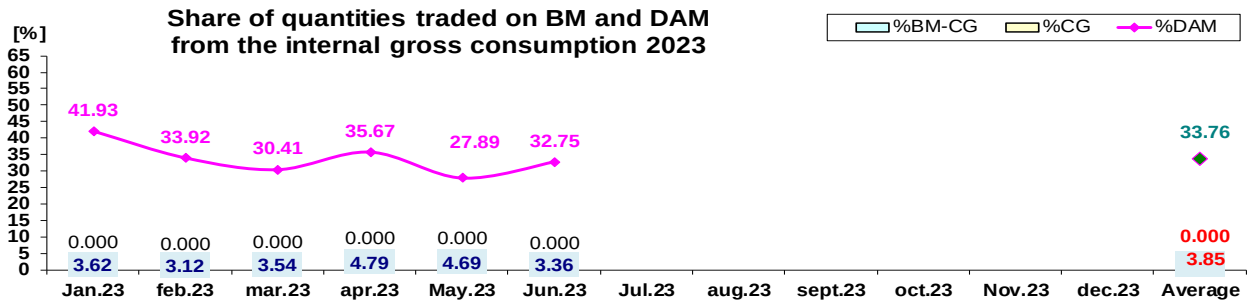
- Monthly percentage values resulted are calculated as ratio between traded volumes on BM / outside BM with financial compensation and gross internal consumption. The annual average value was calculated as average of monthly values. (BM – Balancing Market, DAM – Day Ahead Market, BM-CG – difference between Balancing Market and traded volume on congestion).





	2023												
	Jan.23	feb.23	mar.23	apr.23	May.23	Jun.23	Jul.23	aug.23	sept.23	oct.23	Nov.23	dec.23	Average
%BM	**3.62**	**3.12**	**3.54**	**4.79**	**4.69**	**3.36**						**0.00**	**3.85**
%DAM	41.93	33.92	30.41	35.67	27.89	32.75						0.00	33.76
%CG	0.000	0.000	0.000	0.000	0.000	0.000						0.000	0.000
%BM-CG	3.620	3.117	3.538	4.785	4.694	3.361						0.000	3.853
% outside BM	0.00	0.00	0.00	0.00	0.08	0.00						0.00	0.01

Balancing Energy Market Transactions

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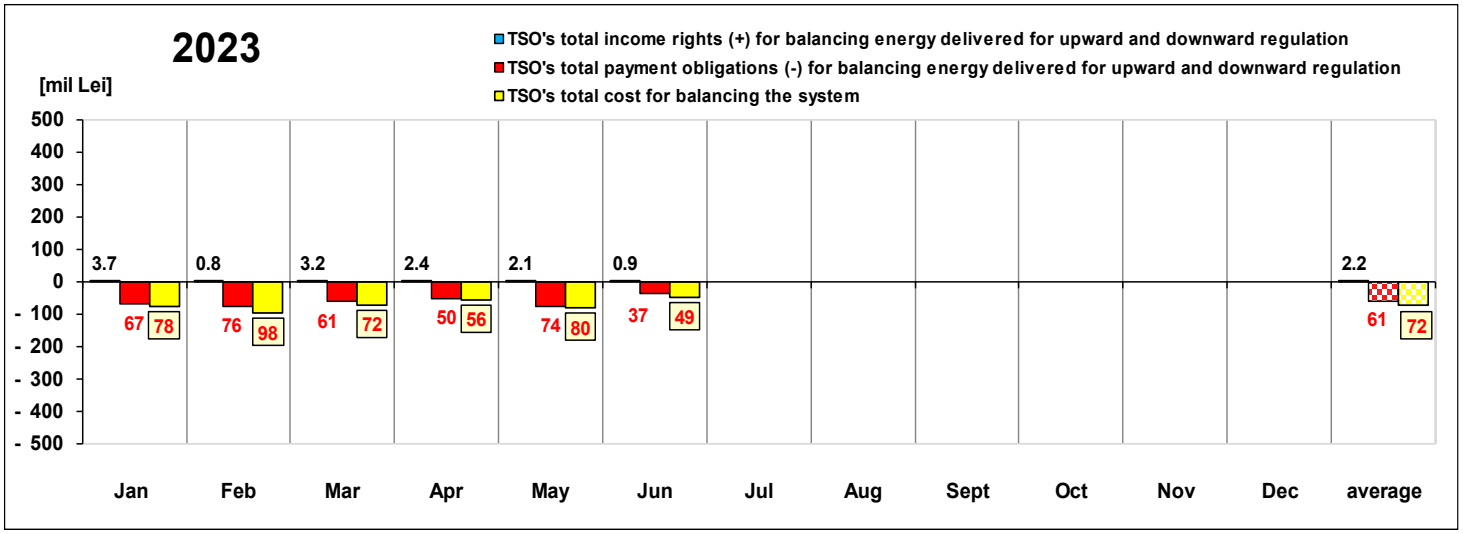

[Lei]		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	average	Sum
TSO's income rights / payment obligations for balancing energy delivered for downward regulation	incomes (+) prices ≥0	3 671 254	764 288	3 191 826	2 401 619	2 148 297	863 275							2 173 427	13 040 560
	payments (-) prices <0	-18 058 105	-13 750 607	-2 780 494	-2 350 152	-47 431 536	-1 766 011							-14 356 151	- 86 136 904
TSO's payment obligations / income rights for balancing energy delivered for upward regulation	payments (-) pricesi ≥0	-48 959 475	-62 157 235	-57 883 797	-47 817 479	-27 021 006	-34 764 702							-46 433 949	- 278 603 692
	incomes (+) prices <0	0	0	0	0	0	0							0	0
TSO's total income rights (+) for balancing		3 671 254	764 288	3 191 826	2 401 619	2 148 297	863 275							2 173 427	13 040 560
TSO's total payment obligations (-) for		-67 017 580	-75 907 841	-60 664 291	-50 167 631	-74 452 541	-36 530 713							-60 790 099	- 364 740 597
TSO's total cost for balancing the system		-78 018 832	-97 917 681	-71 922 686	-55 930 994	-80 062 808	-49 361 669							-72 202 445	- 433 214 671
Value of transactions outside BM (with		0	0	0	- 66 398	- 14 919	0							- 13 553	- 81 317
Congestion Cost on BM		0	0	0	0	0	0							0	0
Congestion Cost outside BM		0	0	0	- 88 286	0	0							- 14 714	- 88 286

* The annual average value was obtained as arithmetic average of the monthly values.

Balancing Market

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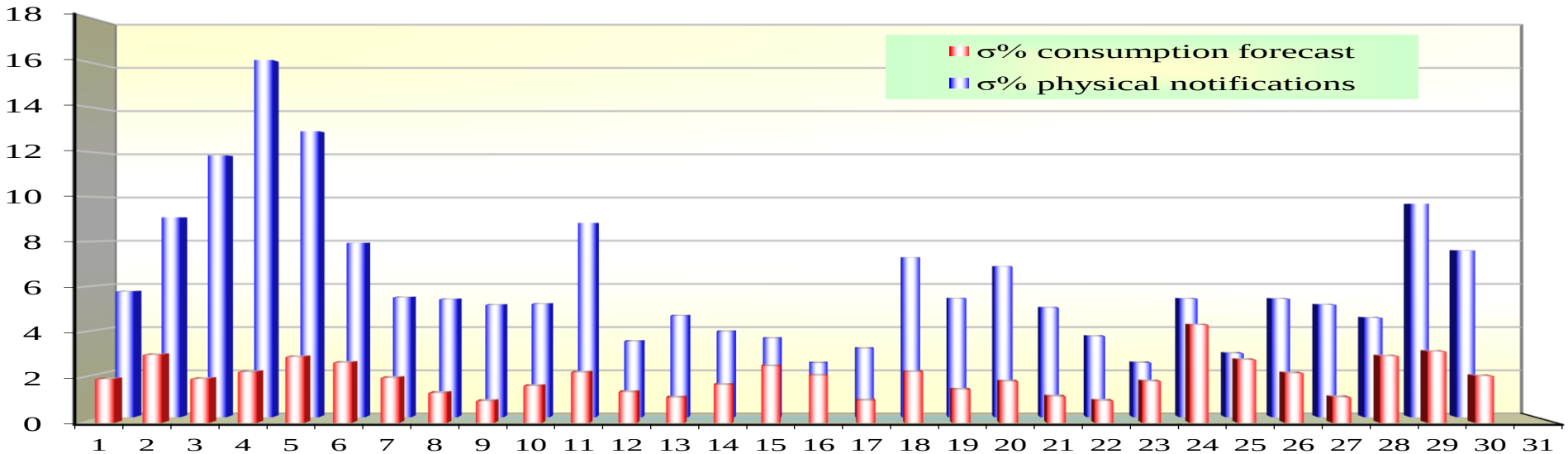
Standard deviation of physical notifications and consumption forecast against the actual consumption in June 2023



Jun 2023

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
σ% consumption forecast	1.93	3.00	1.94	2.25	2.91	2.66	1.99	1.32	0.96	1.63	2.23	1.36	1.12	1.68	2.51	2.09	0.98	2.25	1.47	1.83	1.16	0.97	1.83	4.33	2.78	2.19	1.13	2.95	3.15	2.07
σ% physical notifications	5.71	9.08	11.89	16.23	12.99	7.91	5.44	5.35	5.10	5.14	8.82	3.44	4.60	3.89	3.58	2.45	3.12	7.25	5.39	6.84	4.97	3.67	2.47	5.38	2.89	5.38	5.11	4.51	9.70	7.57

$\sigma_{\text{medie\% prognoză consum}} = 2.02$

$\sigma_{\text{medie\% notificări}} = 6.20$

$$\sigma average\%consumption forecast = \frac{\sqrt{\frac{1}{n}\sum_{i=1}^{n}(R-P)^2}}{\overline{R}} \cdot 100$$

$$\sigma average\%notifications = \frac{\sqrt{\frac{1}{n}\sum_{i=1}^{n}(R-N)^2}}{\overline{R}} \cdot 100$$

R = Realized Consumption;

N = Physical Notifications;

P = Consumption Forecast.

Balancing Market

Balancing energy – Selected prices and quantities

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- At the beginning of the month on the Balancing Market operated 86 BRPs, 91 market participants, holding 179 commercially operating dispatchable units. During the month, DU ROVI3 (30WROVIROVI3---K) (01.06), held by BMP CE OLTENIA S.A. (30XROCENCRAIOVAM) and DU ARAD1 (30WARADARAD1---P) (15.06) held by BMP CET ARAD S.A. (30XROCETARAD---5) were removed from BM. Starting with 14th of June, Megalodon dispatchable storage unit (30W-MEGALODON--4) belonging to BMP MEGALODON STORAGE (30XROMEGALODON-K) and BRP CINTAENERGY (30XROCINTAEN---N) was registered on the BM platform. According to the provisions of ANRE Order no. 213/2020, as subsequently amended and supplemented, the following amendments were made during the month:
  - were registered in the BM during the probationary period, the following BRPs:
    - ✓ HOLLOWAY SOLAR (PROBE) (30XROHOLLOSOLARX) (08.06), following the start of the trial period for the solar production unit HOLLOWAY_PROBE;
    - ✓ BIO VANATORI (PROBE) (30XROBIOVANATORS) (09.06), following the start of the trial period for the solar production unit VANATORI_PROBE;
    - ✓ DANUBIU CETVOLT (PROBE) (30XROCETVOLT---8) (15.06), following the start of the trial period for the solar production unit VANATORI_PROBE;
    - ✓ UNIVERSITATEA POLITEHNICA BUCURESTI (PROBE) (30XRO-UPBPROBE-2) (15.06), following the start of the trial period for the solar production unit UPB_PROBE.
  - starting with of 27th of June.2023 BM BRP NOVA POWER & GAS SOLAR PRODUCTION (PROBE) (30XRONPGSP-----8) has been removed from BM, as a result of the termination of the trial period at NERVIA etapa II-probe storage unit.

June 2023

Downward Regulation

	Prices			Quantities			Participants						
	Weighted Average [lei/MWh]	Maximum [lei/MWh]	Minimum [lei/MWh]	Selected [MWh]	Actually Delivered [MWh]	Deviation [%]	Number	C1 (selected)	C3 (selected)	C1 (actually delivered)	C3 (actually delivered)	HHI (selected)	HHI (actually delivered)
Secondary	-4.71	0.10	-100.00	26368.10	26368.10	0.00%	3	77.63%	100%	77.63%	100%	6516	6516
Fast Tertiary	-8.27	150.00	-200.00	93007.72	89679.16	3.58%	13	57.38%	94.25%	56.74%	94.47%	4541	4525
Slow Tertiary	-	-	-	0.00	-	-	0	-	-	-	-	-	-
				119375.82	116047.26	2.79%							

Upward Regulation

	Weighted Average [lei/MWh]	Maximum [lei/MWh]	Minimum [lei/MWh]	Selected [MWh]	Actually Delivered [MWh]	Deviation [%]	Number	C1 (selected)	C3 (selected)	C1 (actually delivered)	C3 (actually delivered)	HHI (selected)	HHI (actually delivered)
Secondary	1995.77	2000.00	498.00	11840.48	11840.48	0.00%	3	77.44%	100%	77.44%	100%	6495	6495
Fast Tertiary	913.21	1265.86	90.00	12458.51	12177.91	2.25%	9	77.74%	94.13%	77.92%	94.34%	6246	6275
Slow Tertiary	-	-	-	0.00	-	-	0	-	-	-	-	-	-
				24298.99	24018.39	1.15%							

Balancing Market

Balancing energy – Selected prices and quantities in June 2023

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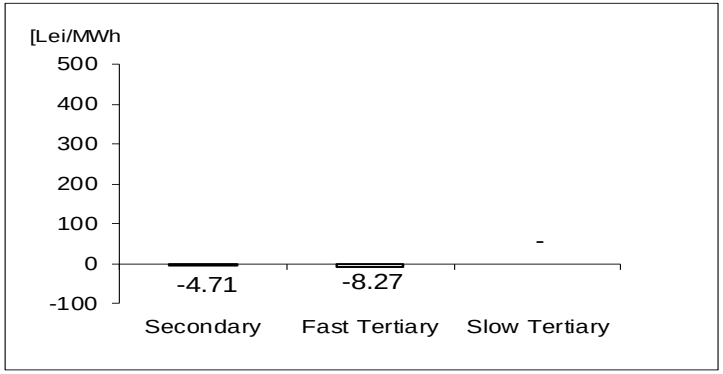
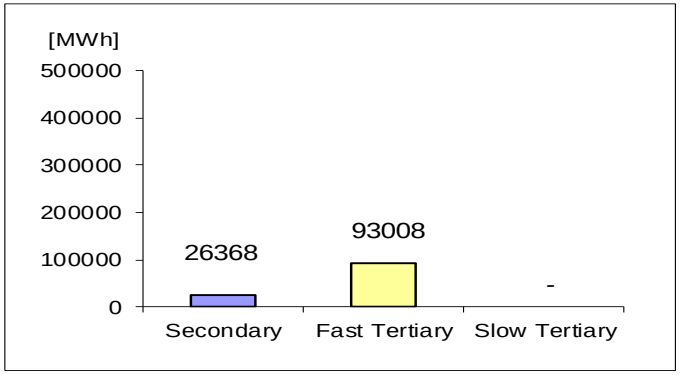
June 2023

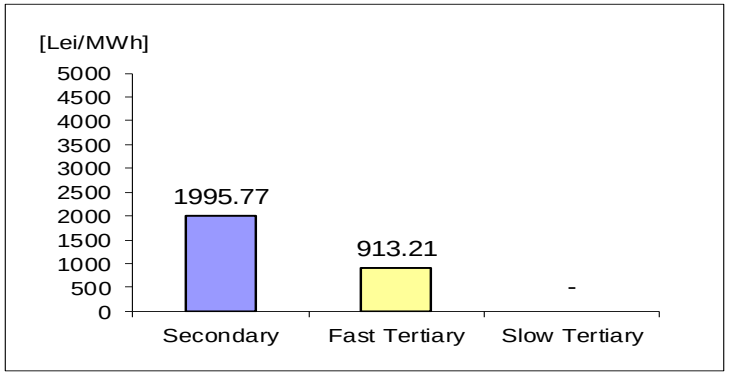
Downward regulation - average price [lei/MWh]



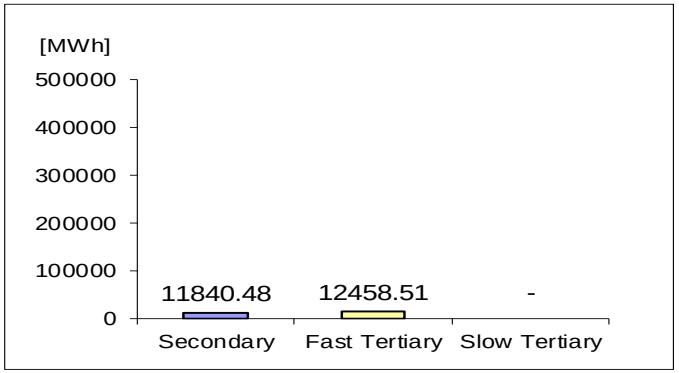
Downward regulation - selected quantities



Upward regulation - average price [lei/MWh]



Upward regulation - selected quantities

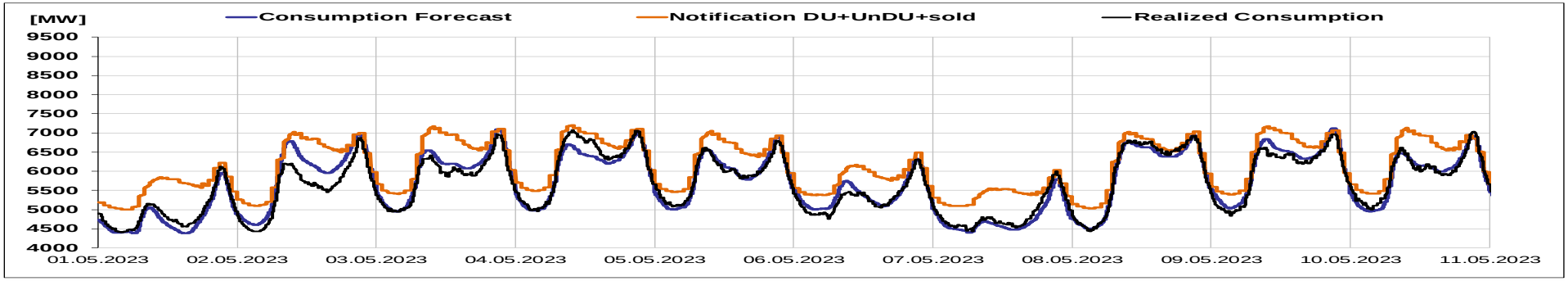


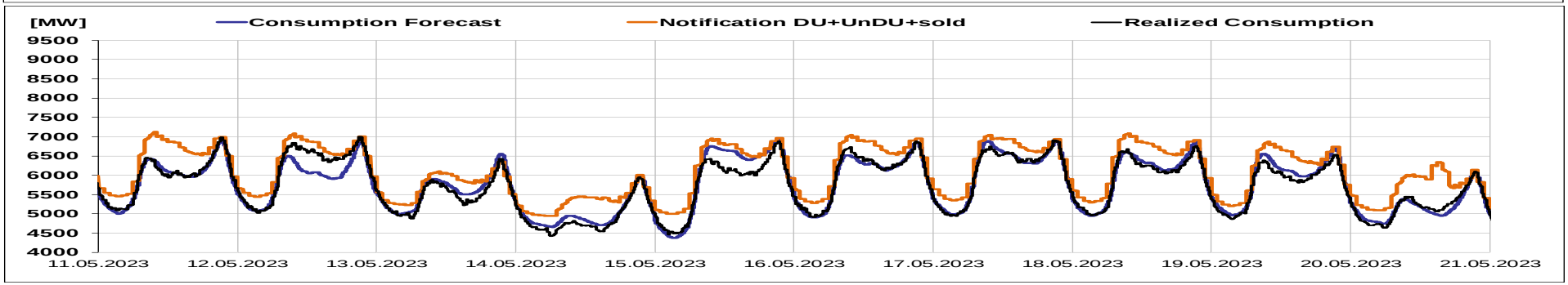
$$\textbf{Price}_{\,average\ weighted,\ regulation\ type,\ direction} = \frac{\sum(Q_{i,j} * P_{i,j})}{\sum Q_{i,j}},$$

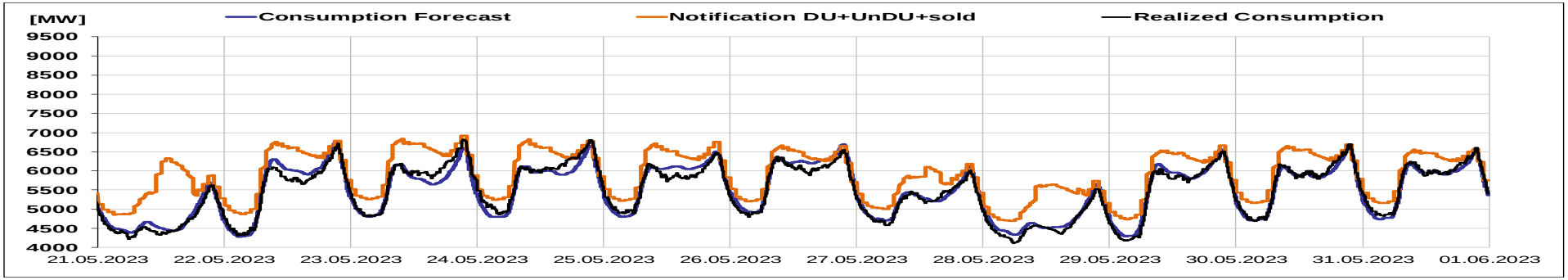
where $Q_{i,j}$, $P_{i,j}$ represents the quantity, respectively the price of the energy selected, corresponding to the selected transaction j in the dispatching interval i.

Balancing Market

Realized consumption, forecast, notifications in D-1

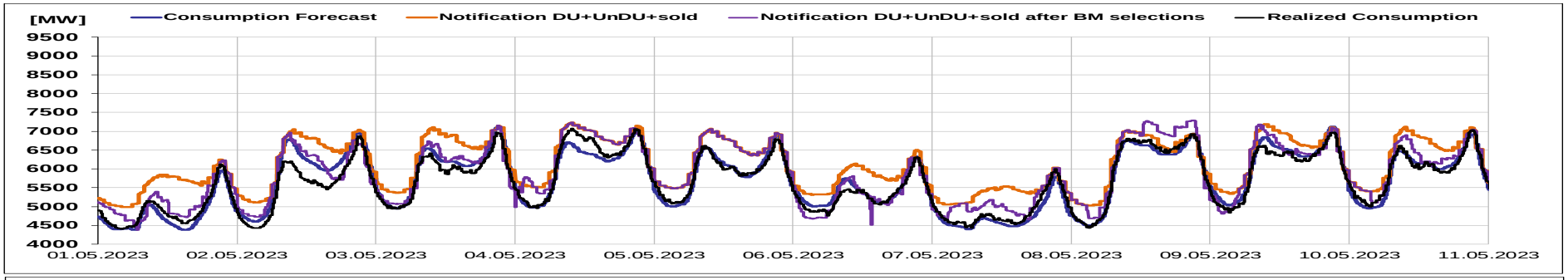


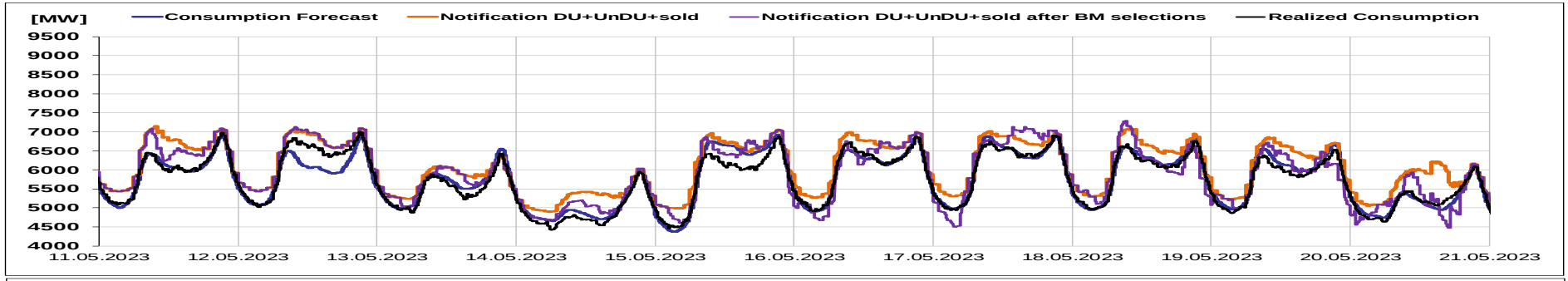


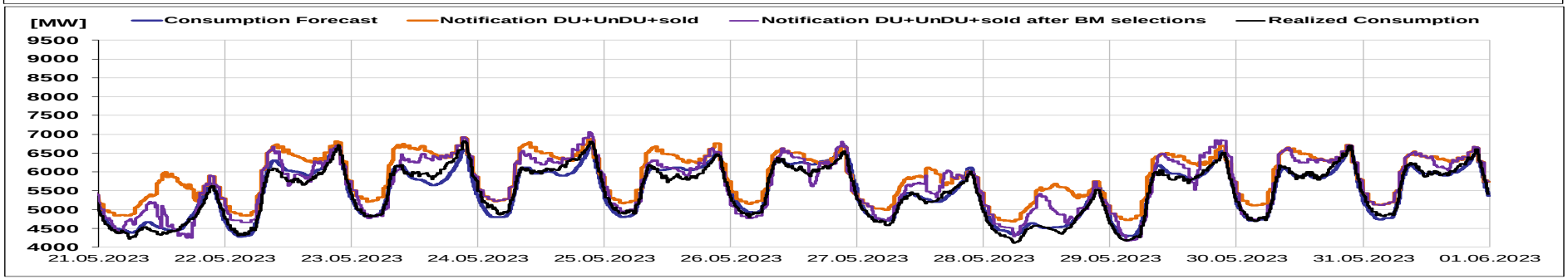


Balancing Market

Realized consumption, forecast, notifications, notifications after BM selections in D (end of delivery day)

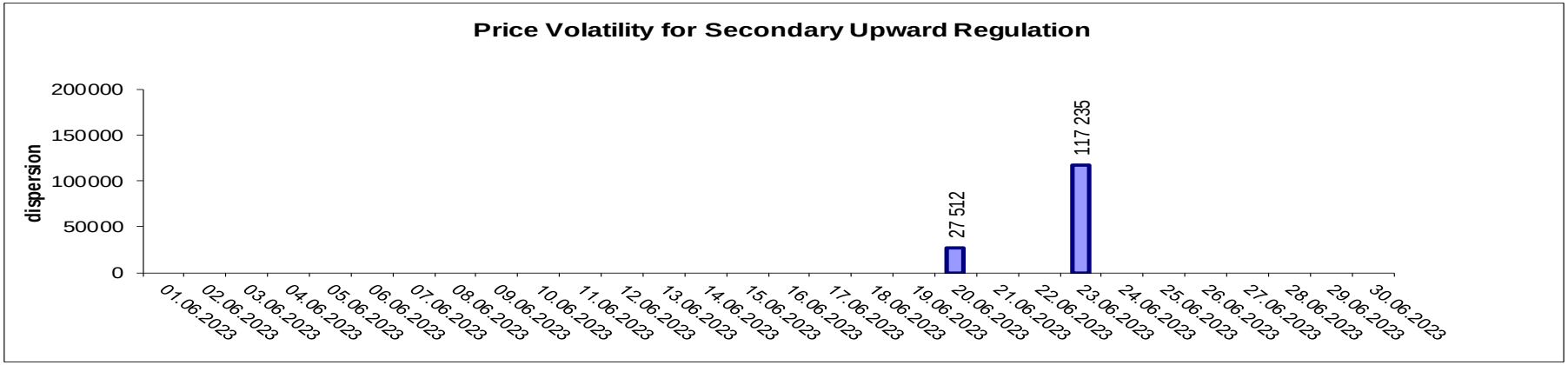


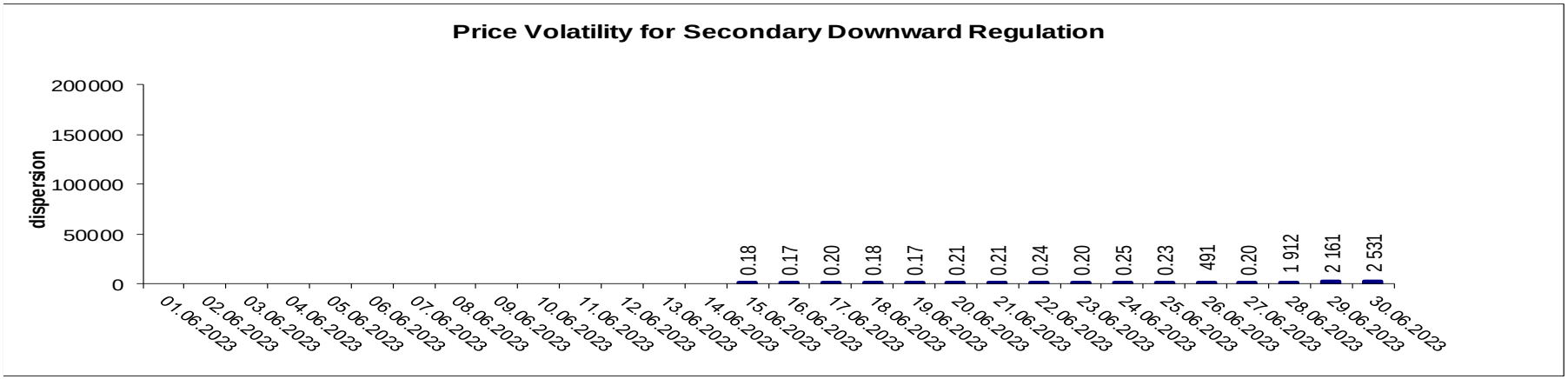




Balancing Market

Indicators – Price Volatility for Secondary Regulation





Volatility = price dispersion on studied interval:

$$\frac{1}{n-1}\sum_{i=1}^{n}\left(x_i-\bar{x}\right)^2$$

Contact

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