



Transelectrica®
Societate Administrată în Sistem Dualist

MARKET MONITORING REPORT

Balancing Market

February 2024

ANRE - Romanian Energy Regulatory Authority
HHI - Herfindahl-Hirschman Index
BRP - Balance Responsible Party
BMP - Balancing Market Participant
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

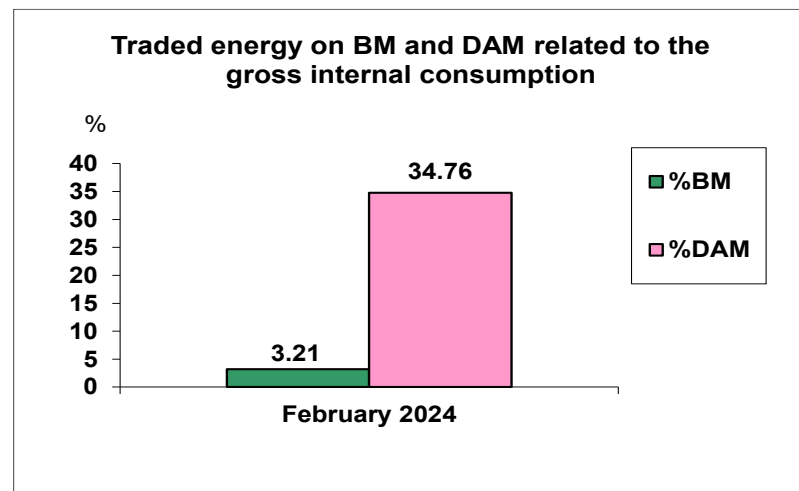
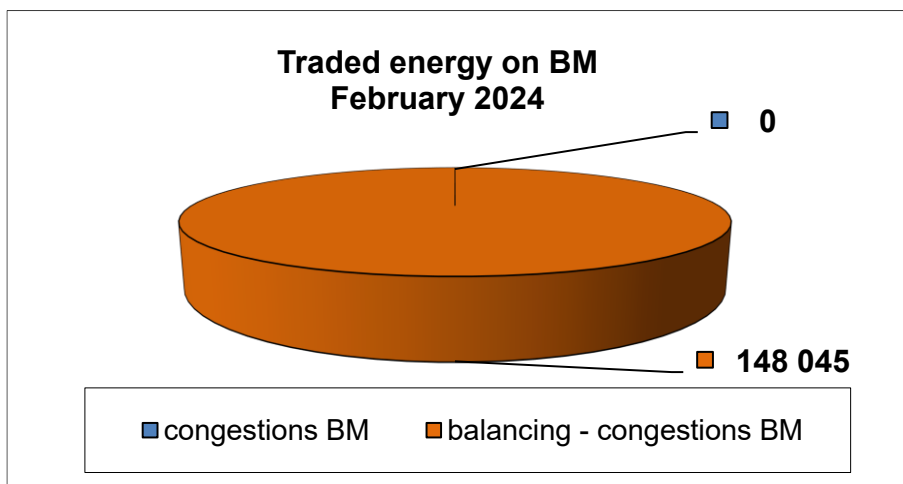
According to the Commercial Code, Transelectrica, the Romanian Transmission System Operator, operates and monitors the activity of 3 types of markets: Balancing Market, Ancillary Services Market and Market for Allocation of Cross-Border Capacities.

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).

- At the beginning of the month on the Balancing Market operated 121 BRPs, 93 market participants, holding 182 commercially operating dispatchable units. According to the provisions of ANRE Order no. 213/2020, as subsequently amended and supplemented during the month, the following changes were made:
 - were registered in the BM during the probationary period, the following BRPs:
 - ✓ KENTON SOLAR (PROBE) (30XROKENTONSOL-2) (03.02) following the start of the trial period for the solar production unit KENTON_PROBE;
 - ✓ TRANSAVIA (PROBE) (30XROTRANSAVIA-U) (16.02), following the start of the trial period for the solar production unit TRANSAVIA_PROBE;
 - ✓ SOLAR_RENEWABLE (PROBE) (30XROSOLARRENEW5) (22.02), following the start of the trial period for the solar production unit SOLARREN_PROBE;
 - ✓ LAGORAI (PROBE) (30XROLAGORAIP--7) (26.02), following the start of the trial period for the solar production unit LAGORAI_PROBE;
 - ✓ REENERGY_SOLARFUN (PROBE) (30XROREENERGY-P) (26.02), following the start of the trial period for the solar production unit RESOLARFUN_PROBE;
 - ✓ RES ENERGY SOLUTIONS (PROBE) (30XRORESENERGPBP) (28.02), following the start of the trial period for the solar production unit RES_PROBE;
 - ✓ ROMAQUA GROUP (PROBE) (30XRO-RGB-----F) (28.02), following the start of the trial period for the solar production unit ROMAQUA_PROBE;
 - ✓ DERZELAS EOLIAN (PROBE) (30XRODERZELASP-S) (28.02), following the start of the trial period for the solar production unit STALPU2_PROBE;
 - exited BM, BRP DFG ACTIVE IMOBILIARE (PROBE) (30XRODFGACTIVE-5) (15.02), as a result of the termination of the testing period for the solar production PRUNDENI_PROBE.
- Starting with 1st of February, STANESTI was registered as undispachable unit with ELECTRICA FURNIZARE (30XRO-EFSA-----F) as BRP and starting with 5th of February this unit was registered as dispatchable, with ELECTRICA FURNIZARE (30XRO-EFSA-----F) as BRP.

The Balance Generation/Consumption

- The average monthly value of generated power was 7 197 MW and the actual internal gross consumption was 6 617 MW.
- The NDC consumption forecast was close to the actual consumption, the standard deviation being 2.35%. 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 **7.2%**. The greatest daily deviation regarding the notifications was registered on the 27th of February (**13.05%**).
- The energy used in February 2025 for balancing the power system and congestion management was 148 045 MWh (with an average power of 213 MW, which means 3.21% from the internal gross consumption).
- There was no transactions for congestion management or outside BM (with financial compensation).
- The energy used in February 2024 on Day Ahead Market was de 1 600 661 MWh (with an average power of 2 300 MW, which means 34.76% from the internal gross consumption). Data are shown in EET hours.
- The total cost of the energy traded on the Balancing Market was 182 449 340 lei (with an average weighted price of 1 232,39 lei/MWh).





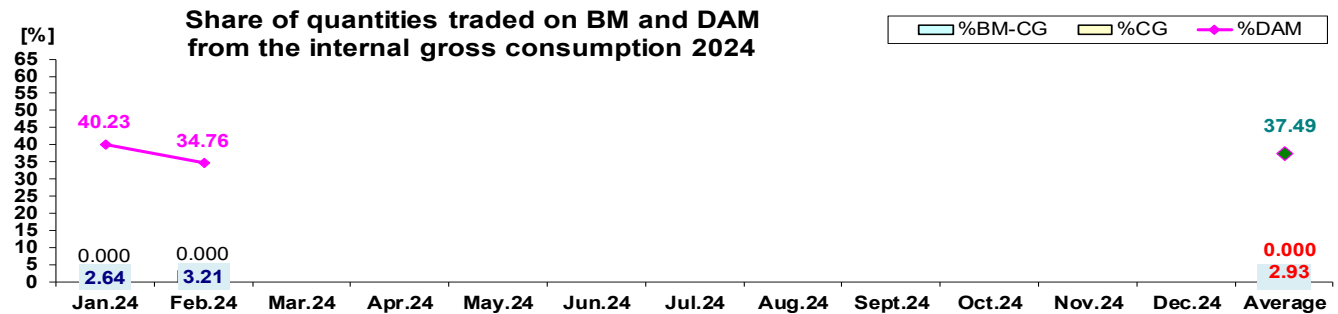
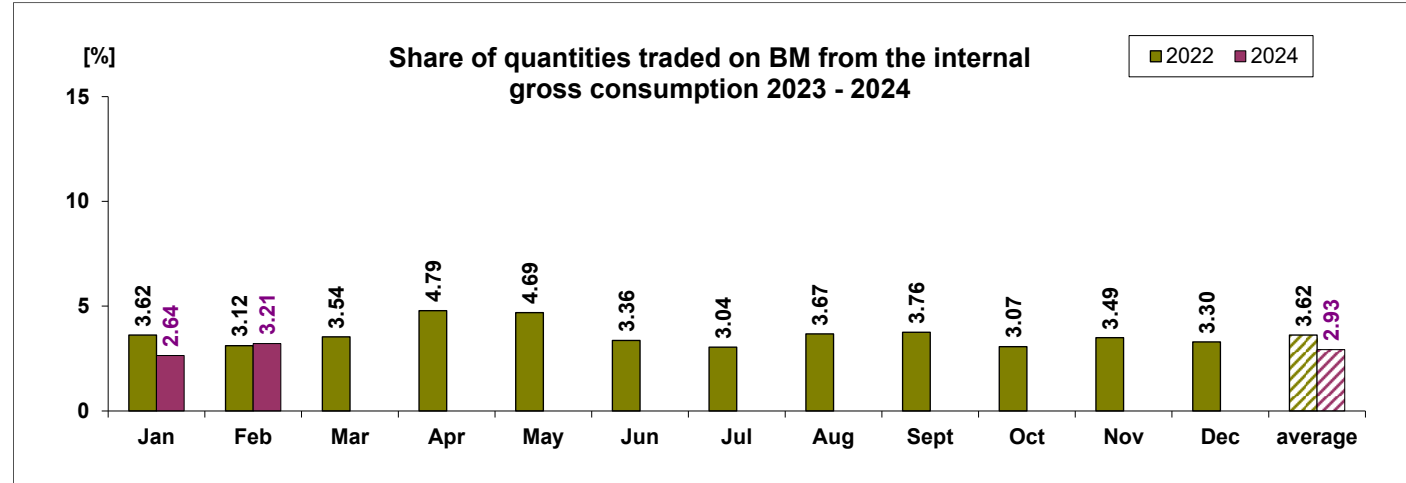
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Balancing Market

The Balance Generation / Consumption

• 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).



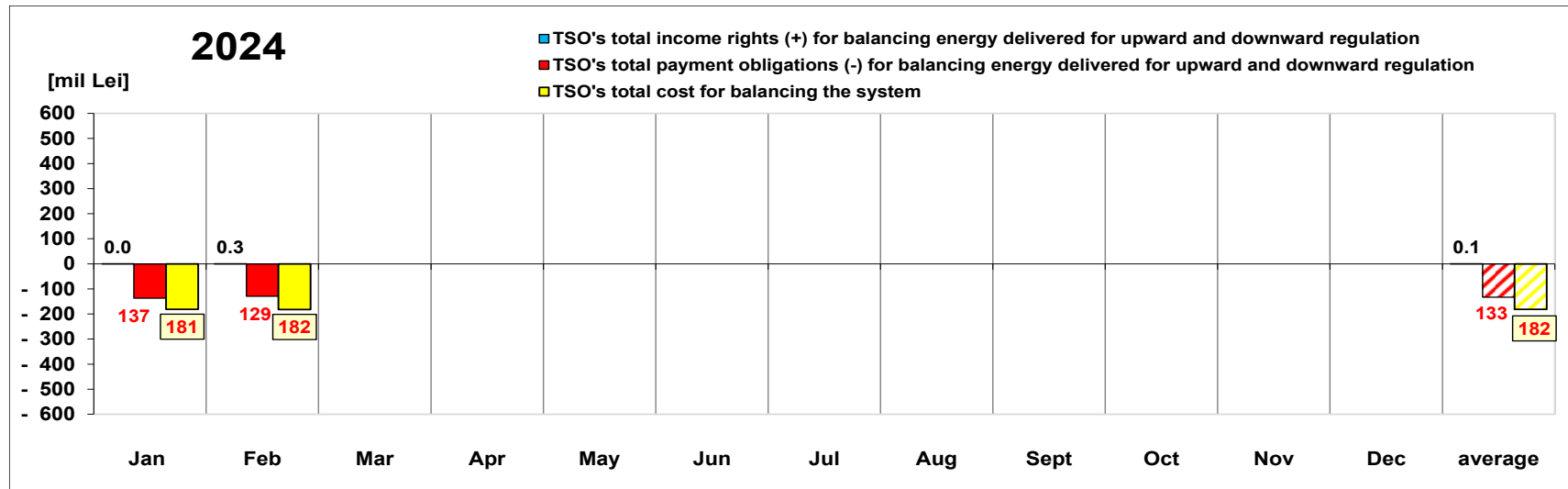
	2024												
	Jan.24	Feb.24	Mar.24	Apr.24	May.24	Jun.24	Jul.24	Aug.24	Sept.24	Oct.24	Nov.24	Dec.24	Average
%BM	2.64	3.21											2.93
%DAM	40.23	34.76											37.49
%CG	0.000	0.000											0.000
%BM-CG	2.644	3.215											2.929
% outside BM	0.00	0.00											0.00



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Balancing Energy Market Transactions



[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	18 140	278 638											148 389	296 779
	payments (-) prices < 0	-35 668 475	-76 223 402											-55 945 939	- 111 891 877
TSO's payment obligations / income rights for balancing energy delivered for upward regulation	payments (-) prices ≥ 0	-101 648 720	-52 902 529											-77 275 625	- 154 551 249
	incomes (+) prices < 0	0	0											0	0
TSO's total income rights (+) for balancing		18 140	278 638											148 389	296 779
TSO's total payment obligations (-) for		-137 317 196	-129 125 931											-133 221 563	- 266 443 127
TSO's total cost for balancing the system		-181 297 377	-182 475 562											-181 886 469	- 363 772 939
Value of transactions outside BM (with		0	0											0	0
Congestion Cost on BM		0	0											0	0
Congestion Cost outside BM		0	0											0	0

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

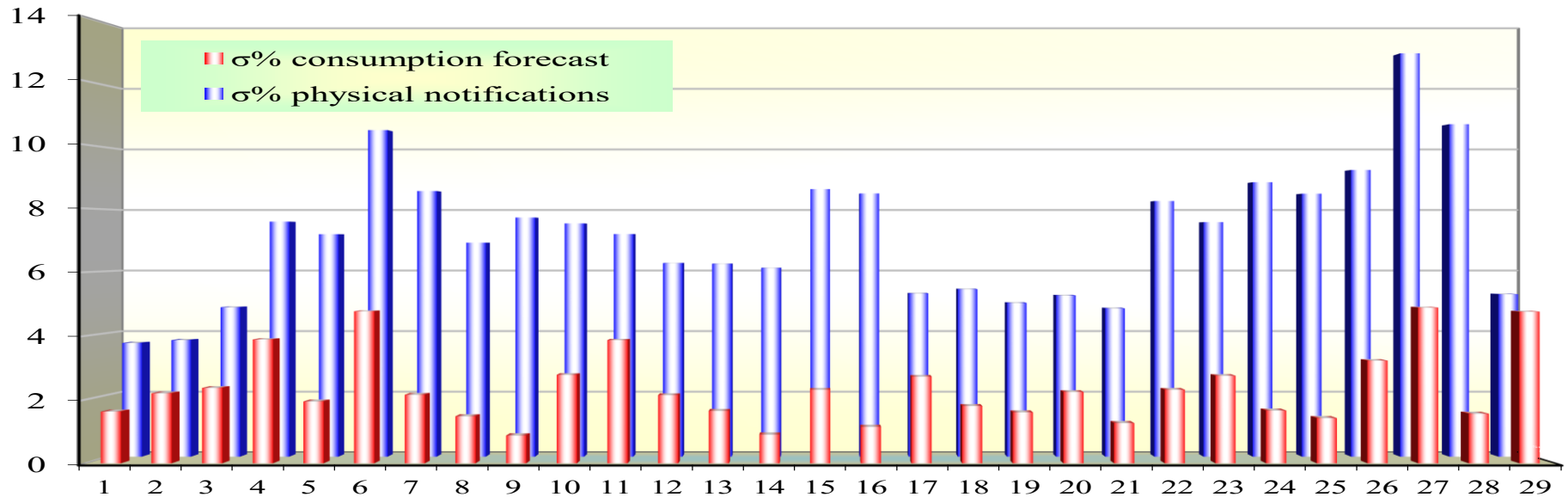


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Balancing Market

Standard deviation of physical notifications and consumption forecast against the actual consumption in February 2024



feb 2024

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
σ% consumption forecast	1.62	2.20	2.37	3.89	1.94	4.77	2.15	1.47	0.87	2.78	3.87	2.14	1.64	0.90	2.31	1.14	2.72	1.80	1.60	2.24	1.26	2.31	2.75	1.66	1.42	3.22	4.89	1.56	4.76
σ% physical notifications	3.68	3.77	4.83	7.60	7.20	10.56	8.59	6.92	7.74	7.55	7.20	6.26	6.24	6.10	8.66	8.51	5.28	5.42	4.97	5.21	4.79	8.27	7.59	8.88	8.51	9.27	13.05	10.76	5.25

σ_{medie}% prognoză consum = 2.35

σ_{medie}% notificări = 7.20

$$\sigma_{average\%consumptionforecast} = \sqrt{\frac{\frac{1}{n} \sum_{i=1}^n (R - P)^2}{\bar{R}}} \cdot 100$$

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

R = Realized Consumption;

N = Physical Notifications;

P = Consumption Forecast.

Public



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Balancing energy – Selected prices and quantities in February 2024

February 2024

Downward Regulation

Secondary Fast Tertiary Slow Tertiary	Prices			Quantities			Participants						
	Weighted Average	Maximum	Minimum	Selected	Actually Delivered	Deviation		C1	C3	C1	C3	HHI	HHI
	[lei/MWh]	[lei/MWh]	[lei/MWh]	[MWh]	[MWh]	[%]	Number	(selected)	(actually delivered)	(selected)	(actually delivered)	(selected)	(actually delivered)
	-2639.01	-100.00	-3000.00	26831.08	26831.08	0.00%	4	66.72%	98.34%	66.72%	98.34%	5181	5181
	-51.15	255.00	-300.00	103710.37	100993.63	2.62%	15	43.56%	89.64%	43.94%	90.11%	3556	3597
	-	-	-	0.00	-	-	0	-	-	-	-	-	-
				130541.45	127824.71	2.08%							

Upward Regulation

	Prices			Quantities			Participants						
	Weighted Average	Maximum	Minimum	Selected	Actually Delivered	Deviation	C1	C3	C1	C3	HHI	HHI	
	[lei/MWh]	[lei/MWh]	[lei/MWh]	[MWh]	[MWh]	[%]	Number	(selected)	(actually delivered)	(selected)	(selected)	(actually delivered)	
Secondary	4636.80	5000.00	2000.00	9533.07	9533.07	0.00%	4	66.33%	98.38%	66.33%	98.38%	5194	5194
Fast Tertiary	814.18	1054.19	50.00	10976.89	10687.15	2.64%	7	81.38%	95.69%	81.91%	95.73%	6731	6812
Slow Tertiary	-	-	-	0.00	-	-	0	-	-	-	-	-	-
				20509.96	20220.22	1.41%							



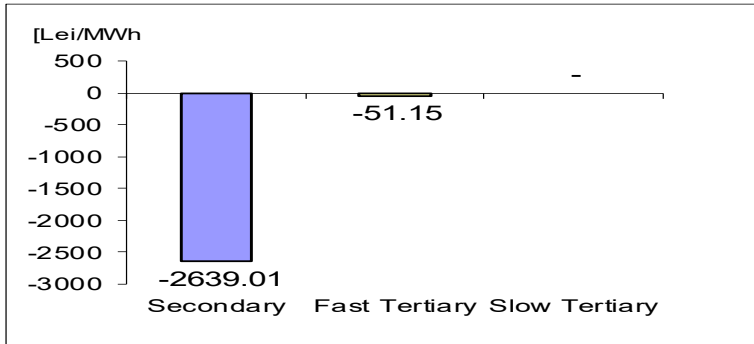
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Balancing Market

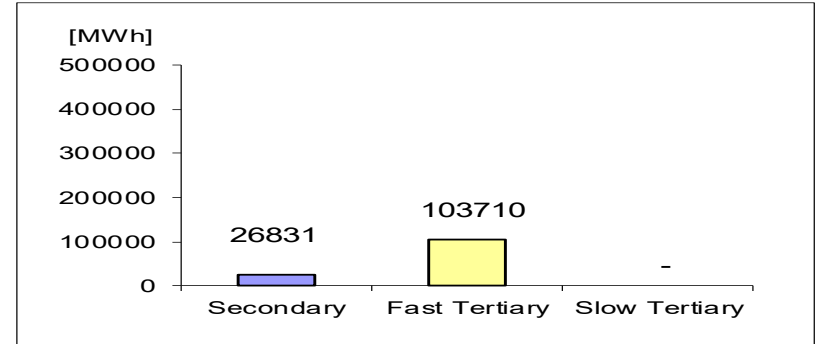
Balancing energy – Selected prices and quantities in February 2024

February 2024

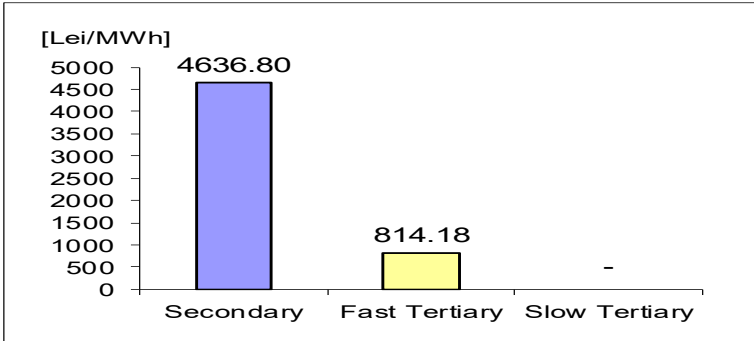
Downward regulation - average price [lei/MWh]



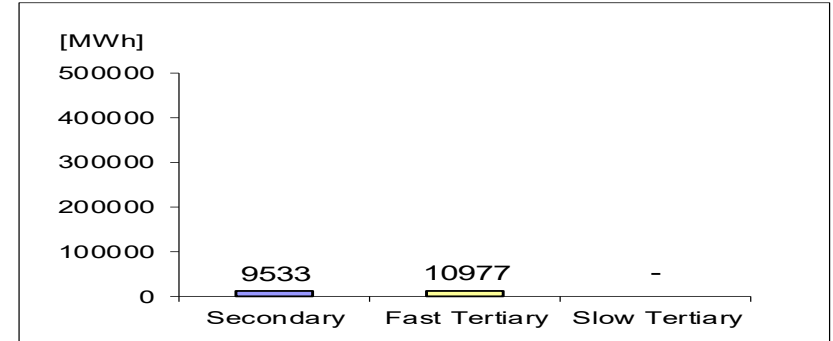
Downward regulation - selected quantities



Upward regulation - average price [lei/MWh]



Upward regulation - selected quantities



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

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 .

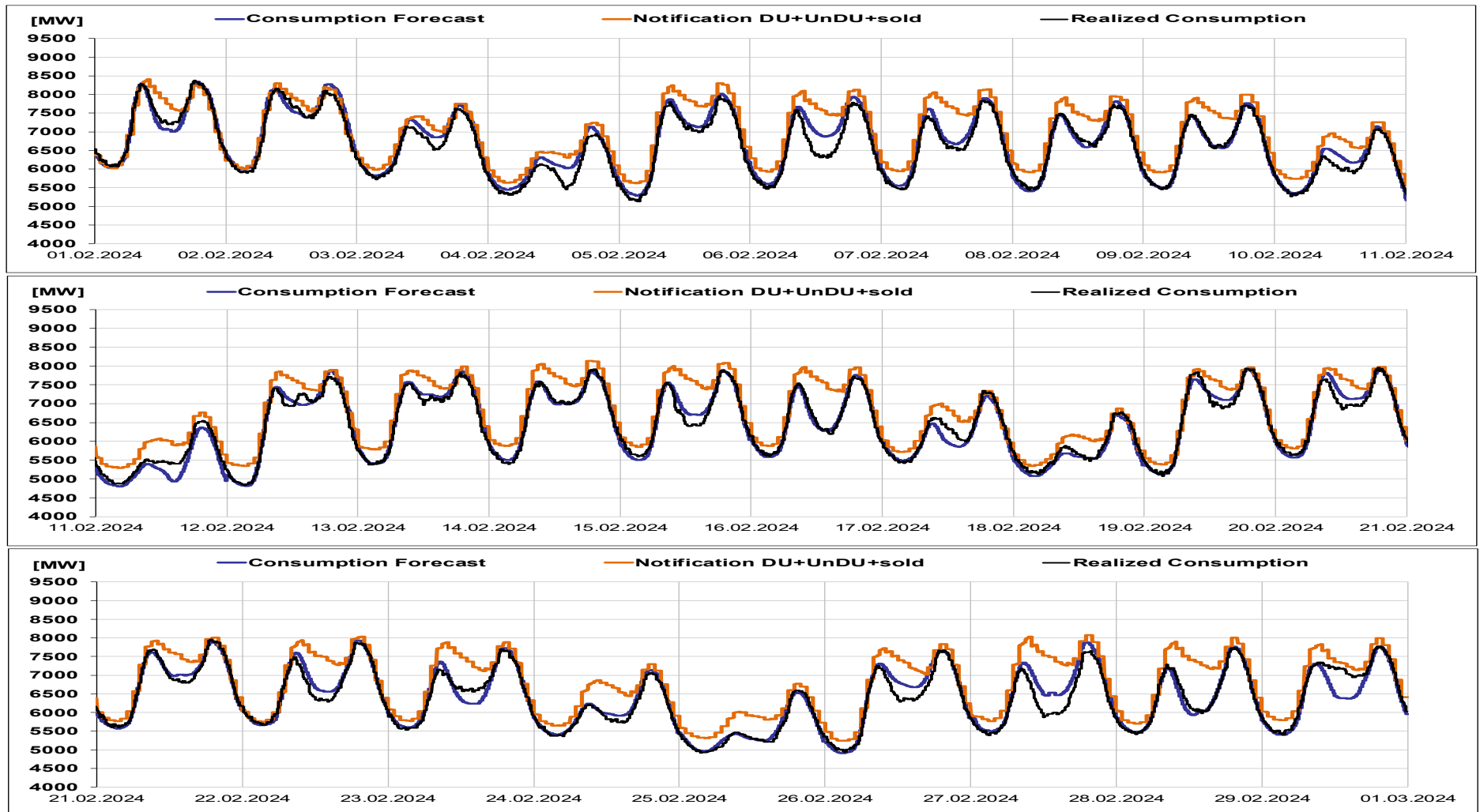


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Realized consumption, forecast, notifications in D-1



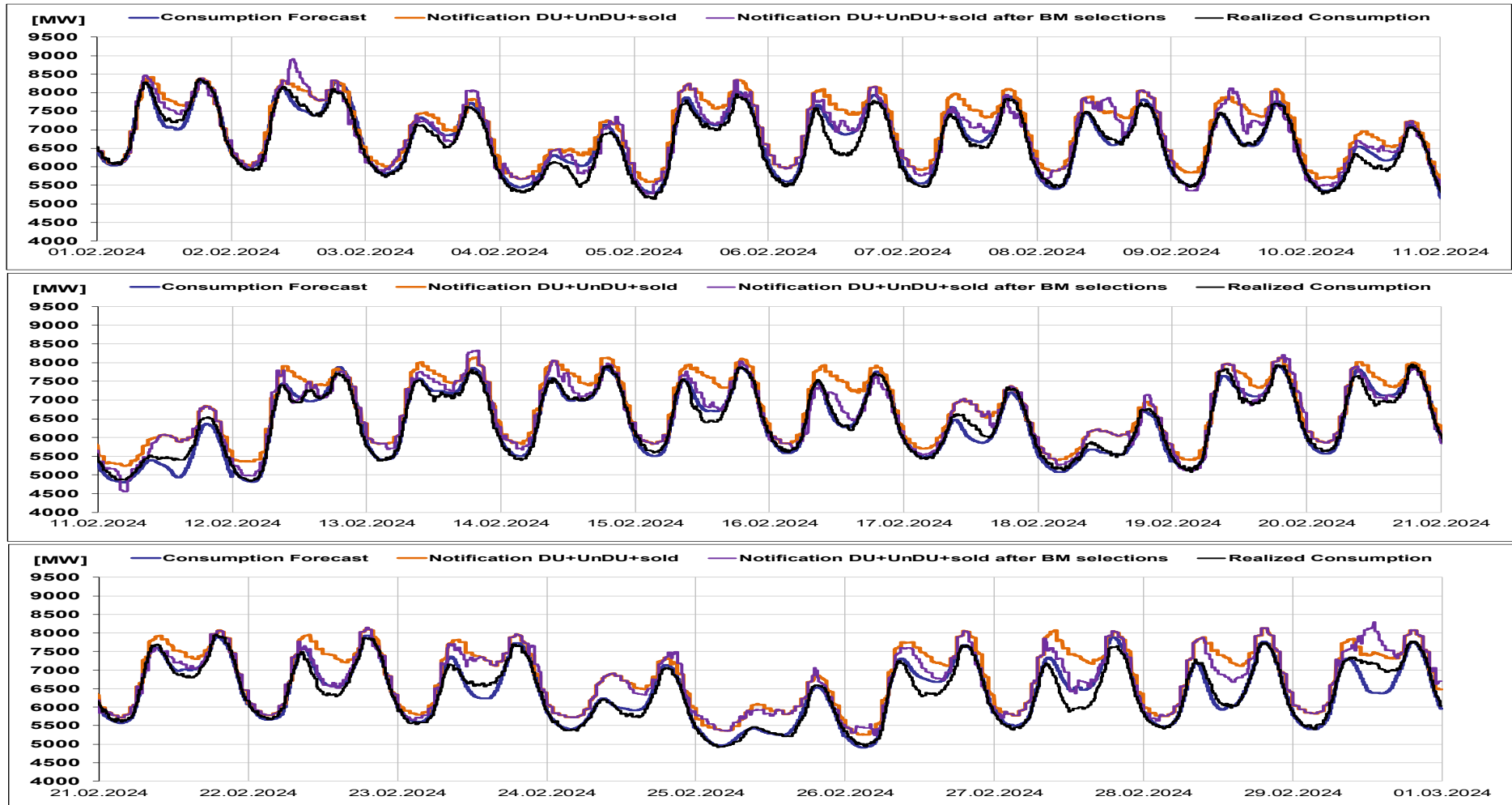


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Realized consumption, forecast, notifications, notifications after BM selections in D (end of delivery day)





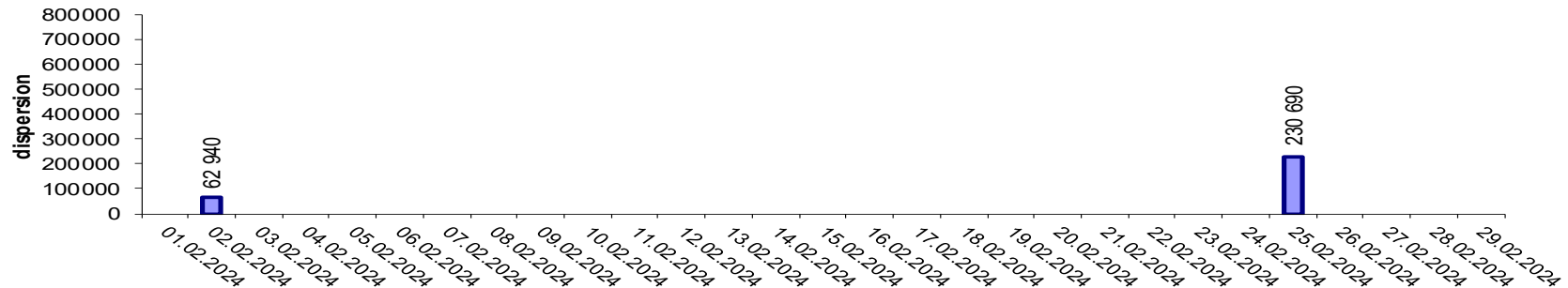
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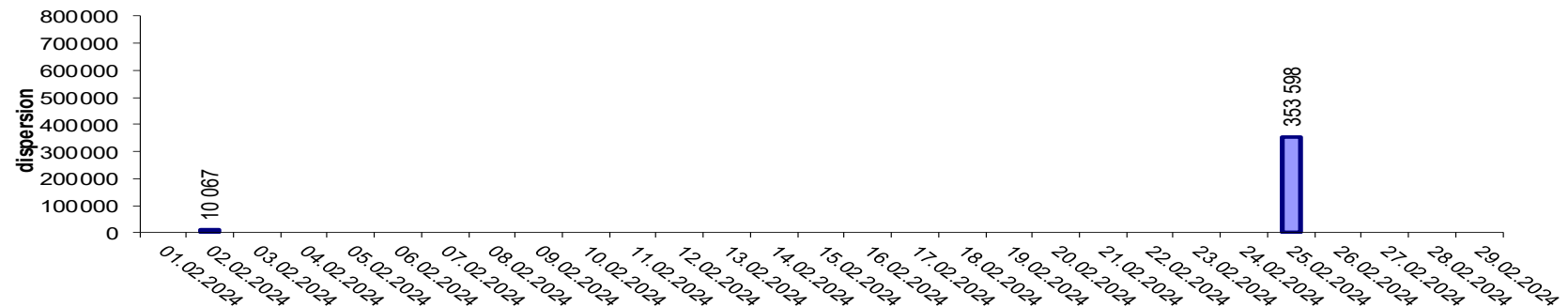
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Indicators – Price Volatility for Secondary Regulation

Price Volatility for Secondary Upward Regulation



Price Volatility for Secondary Downward Regulation



Volatility = price dispersion on studied interval:

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



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